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MANUAL OF PEDAGOGICS

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BY

DANIEL PUTNAM, A.M.

PROFESSOR OF PSYCHOLOGY AND PEDAGOGY IN THE MICHIGAN STATE NORMAL SCHOOL

With an Introduction

BY

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SILVER, BURDETT AND COMPANY

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PREFACE.

THIS manual contains the substance of the instruction given at the present time in the Michigan State Normal School upon the *general* application of psychology to the science and art of teaching. As indicated, the instruction is supplemented, as time permits, by reference to various works. Methods of teaching *particular* branches of study are considered only incidentally, for the purpose of illustrating the application of general laws.

The form of the matter of the book is the result of a gradual growth of many years. Portions of the matter have been rewritten and revised several times, and probably the process of revision would still go on if publication were delayed longer. The work does not assume to be a complete treatise upon Pedagogics, but a contribution to the educational discussion of the day. It is not addressed, on the one hand, to "advanced thinkers," nor, on the other, to those who are looking for "a short cut" into the teacher's position, with no desire to study principles as a basis for correct methods of teaching, and school work generally, but to students of Normal Schools and to others of about the same degree of peda-

gogical attainment. It is hoped that the manual may serve a useful purpose as a text-book in such schools, in colleges, and in teachers' reading circles, and may also be of service to private readers.

It would be worse than folly for the ordinary writer upon Pedagogics to lay claim to much of originality in thought. He will be satisfied if he succeeds in presenting familiar truths in such a way as to render their real signification clearer and their practical applications easier and more obvious. To secure these ends, an effort has been made to avoid the unnecessary use of technical terms, and to state principles and laws in every-day language.

The writer is not consciously a disciple of any particular master, and does not suppose that any one pedagogical school has a monopoly of truth relating to education and teaching. He has, consequently, borrowed freely from all available sources, believing that the old is not worthless simply because it is old, nor the new valuable merely because it is new, but that it is the part of wisdom, in educational as in other affairs, "to prove all things, and hold fast to that which is good," without regard to age or parentage.

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INTRODUCTION.

AS the study of teaching goes on, it becomes increasingly more apparent that a large share of each individual's culture comes to him independently of the schools.

Maturing, and growth, and development, and learning are terms which name natural processes whose direction only is at the call of the teacher, not their genesis or continuance. The unschooled child, whether found upon the streets of civilization, among the wild tribes of barbarism, or bound by the chains of human slavery, is as certainly destined for a course of maturing and functional improvement as he who is reared in an atmosphere of letters, and whose hands are upheld by culture. A cultivation of mind is as surely effected by nature as by man. In the two cases the processes are the same, and favoring conditions are equally appropriated by the mind. Teaching is a process of multiplying these favoring conditions. The teacher can no more think for the child than can the clod or the cloud which commands his attention. The former may converge stimuli, where the latter scatters; use the means of culture thriftily, where nature is only wasteful, or worse;

but there is every reason for supposing that the mental conditions of learning, and the process itself, are the same in both cases.

If this be true, method — the method of the school — is not something imposed upon the child, but it is something which the child imposes upon the school. What the processes of learning and growth are, fixes the nature of teaching and the function of the school. In the purpose of the school are the rational grounds for whatever administration and equipment the school possesses. The choice of school courses, and apparatus, and texts, and the daily programme, and the form and conduct of the recitation, is not an arbitrary or indifferent matter. These are fixed in the nature of the end to be reached. Were that end perfectly understood by the teacher, no detail of the school would be unimportant. As it is, the theme of this book concerns the presentation of the conditions under which the most effective teaching goes on. That is, the emphasis is not put upon the teaching act, but rather upon the qualities of mind and life which make one or another teaching act to be reasonable.

To retrace the steps in this brief discussion, observe the following points, which are unquestionably in consonance with the text, if not directly extracted from it:

1. Education in the large sense and in the final analysis is the life-process through which the individual is matured.

2. The Science of Education is the body of laws in accordance with which the process of maturing goes on.

3. The Art of Teaching is the intelligent direction of this process.

4. The Science of Teaching is the body of principles in accordance with which the intelligent direction of this process goes on.

It will be obvious to the reader that a comprehensive pedagogical treatise would involve a detailed consideration of these several aspects of the subject. The author's discussion rests a consideration of the question primarily upon point 4. Nevertheless, chapters i.–v., inclusive, comprise a very clear statement of the essential facts relating to points 1 and 2. With evident wisdom, the book shows careful discrimination of these fundamentals from the mere ways of doing class-work. Devices and recipes, on the one hand, are avoided, as being matters of personal concern to the teacher, and, on the other, particular applications to specific subjects, as being foreign to the purpose of the book.

It need scarcely be said, here is a rich field heretofore but little cultivated, and often in a commonplace way. The book betrays an evident familiarity with current and recent, no less than the older, literatures upon the subject that is quite wholesome. The use that has been made of the conclusions of recent studies in physiological and experimental psychology and child mind must prove healthful to the great body of teachers who are doing their work out of reach of the new laboratories, and without personal acquaintance with the growing company of faithful investigators. The Bibliography at the close of chapter xiii. will be sufficient to di-

rect teachers to a course of profitable reading in this line.

It is noted also that the book is adapted for use in whatever systematic and serious study of pedagogical doctrine. Normal Schools, College departments of Pedagogy, private secondary schools, Teachers' clubs where earnest continuous professional readings are undertaken, and Reading Circles conducted upon plans for work should all find this a helpful manual.

The use of the book, it should be said, presupposes a fair knowledge of mind. Chapters iv. and v. are rather pedagogical than psychological. The treatment there, as elsewhere through the book, has the teacher in view, and allows for some insight already into the functions and workings of the mind. Its adaptation to a serious and critical study in schools and colleges is obvious.

The work is commended as a positive and discriminating contribution to the discussion of an important question, — for teachers a vital question.

A MANUAL OF PEDAGOGICS.

CHAPTER I.

WHAT EDUCATION IS.

A FORMAL definition of education is not absolutely essential at the outset of our work. Nevertheless, one who proposes to perform any task, or to prepare himself to do any work, has need to form a clear and definite idea of the nature and extent of the work to be done. Without such a conception he can have no ideal, no distinct aim, no settled purpose. His condition is like that of one who should set out upon a journey with no definite notion of the direction in which he is to travel, or of the place he is to reach, or of the means he is to employ.

Various Definitions.— Before considering the applications of psychology to the practical business of the school-room, it will be worth our while to inquire what education really is, and, consequently, what teaching is. This inquiry is the more necessary from the fact that definitions given by prominent educators are exceedingly diverse, and in not a few cases apparently contradictory. To those not much accustomed to look below the surface of things, this diversity is often perplexing and confusing. They need the help of friendly

suggestions to enable them to discover how apparent contradictions may be reconciled, and how unity and consistency may be brought out of diversity.

This to be expected.— A little reflection brings us to see that such variety of definition and description is exactly what might have been anticipated. It is not a matter of wonder or surprise, or, on the whole, even of regret. It is, indeed, of great advantage to the intelligent and sincere seeker after truth.

Illustration.— Different observers, looking at the same natural object from different directions, receive and carry away impressions and mental pictures marvelously unlike. Their descriptions of the object, made with equal faithfulness and honesty, seem to have very little in common. Yet each person has recorded fairly and truthfully what he saw from his point of view. A correct and complete notion of the whole object, as viewed from all directions and upon all sides, can be obtained only by combining these various and varied descriptions into a single one which shall embrace everything of importance in them all. In order to secure unity, consistency, and harmony in the final description, omissions and modifications will sometimes be necessary in the original accounts, but nothing really essential will be omitted.

Upon what the Definition depends. — In like manner, students of education approach the subject from different directions, view it in different aspects, and consider it with reference to different purposes and ends. Each writer describes what he sees, in the direction in which he is looking, and from the position which he occupies. His definition depends upon his point of observation, and upon the particular object which he wishes to

accomplish, or the end which he hopes to attain. Of necessity, the view taken by any one individual can be only a partial and incomplete one. Few minds have such breadth and depth, such evenness of balance and impartiality of judgment, as to be able to grasp and to hold firmly and steadily all the truth relating to any important subject, and to arrange this truth into a system in such a way that every part shall appear in its proper position, and with just the prominence to which it is entitled.

This is especially true of the subject of education. The subject presents many and varied aspects. One aspect attracts and charms one class of minds, another aspect equally attracts and charms another class of minds. The philosopher looks at one aspect, the practical man looks at another aspect. The statesman takes one view and has regard to one end; the teacher of morals and religion takes a different view and has regard to a different end. These aspects are not necessarily contradictory, but each man is naturally disposed to think his own view of more importance than any other, and occasionally some over-zealous partisan insists that his peculiar view is the only rational and reasonable one. A few quotations will show the correctness of these statements, and also the variety of form in which the same ideas may be expressed.

Results of Education upon the Individual.— The first definitions and statements have reference mainly to the results of education upon the individual.

"The purpose of education is to give to the body and to the soul all the beauty and all the perfection of which they are capable." — PLATO.

"The end of education is to render the individual as much as possible an instrument of happiness, first to himself, and next to others." — JAMES MILL.

"A liberal education is an education in which the individual is cultivated, not as an instrument towards some ulterior end, but as an end to himself alone; in other words, an education in which his absolute perfection as a man, and not merely his relative dexterity as a professional man, is the scope immediately in view." — HAMILTON.

"Education is the process of making individual men participants in the best attainments of the human mind, namely, in that which is most rational, true, beautiful, and good." — WHEWELL.

"Education is the harmonious and equable evolution of the human faculties." — STEIN.

"It has been fashionable in educational treatises, since the days of Pestalozzi, to define the province of education as 'The full and harmonious development of all our faculties.' This is, however, a survival of Rousseauism, and, like all survivals from that source, is very dangerous. It is of first importance to consider this definition in the light of psychology. It makes no discrimination among the faculties themselves. It ignores the great distinction between our higher and lower faculties, between our faculties that are means to ends above them, and those faculties which are ends in themselves. The definition ignores the distinction between man as an individual and man as a social whole, the state, the civil community, the church, the family. It fancies man the individual to be something complete in himself and without relation to society. Man has two selves: one his natural self as a puny individual, the other his higher self, embodied in institutions. This is the worst defect in the definition, because it leads the thought of the educator away from the essential idea of education, which is this: *Education is the preparation of the individual for*

reciprocal union with society; the preparation of the individual so that he can help his fellow-men, and in return receive and appropriate their help. The 'harmony' definition is abstract; this definition is concrete. Reciprocal help of social whole and individual, in the first place, implies both special and general education. To help one's fellows one must get skill in some useful occupation. But to be able to receive the help of one's fellow-men implies general education, the capacity to receive and appropriate the help of institutions, — the spiritual help of the race in science, art, literature, and moral and religious ideas, as well as in the matter of creature comfort." — W. T. HARRIS.

The reply to the criticism of Mr. Harris by the believers in the "harmony theory" will be that "harmonious development" means the development of the powers of the soul in due proportion; that the higher always and everywhere takes precedence of the lower; that the lower is to be developed in subordination to the higher. It will also be affirmed that development has regard for the relations of man to society, and fits him "for reciprocal union with society;" prepares him to help his fellow-men, and to be helped by them in return. The antagonism is in appearance more than in reality.

Means and Agencies of Education. — The following definitions have reference mainly to the agencies, means, and instrumentalities employed in the work of education: —

"Education is the process by which one mind forms another mind, and one heart another heart." — JULES SIMON.

"Education, in the widest sense, is a general expression that comprehends all the influences which operate on the

human being, stimulating his faculties to action, forming his habits, moulding his character, and making him what he is; more especially, education is the training carried on consciously and continuously by the educator." — J. PAYNE.

"Education, in the last analysis, is the influence of one person upon another." — SCUDDER.

"Education is the culture which each generation purposely gives to those who are to be its successors. In a more limited sense, education is confined to the efforts made of set purpose to train men in a particular way, and more especially to the labors of professional educators or schoolmasters." — J. S. MILL.

Preparation for Life. — Some definitions have in view almost exclusively the preparation which the writers believe education should give for the practical duties of life. The following are of this kind: —

"I call a complete and generous education that which fits a man to perform justly, skilfully, and magnanimously all the offices, both public and private, of peace and war." — MILTON.

"One great end of education is to communicate to the pupil that sort of knowledge which is most likely to be useful to him in the sphere of life which Providence has assigned him." — TATE.

"Education, in the most extensive sense of the word, may comprehend every preparation that is made in our youth for the sequel of our lives." — PALEY.

"Education is the preparation for complete living." — SPENCER.

"The proper education of to-day is a preparation for the duties and responsibilities of life. Our students must, therefore, come out of school with the elements of high character, with a vigorous, healthy body and mind, able to put both hand and brain to work, to enter readily into sympathetic co-opera-

tion with the institutions of their country and time. Practical accomplishments are essential to a good education, though they are not the whole of it. While training to the full the faculties of the individual, including his mechanical powers, and fitting him to act his part as a citizen, a home-builder, and a bread-winner, we must not fail to set a high value on the finest products of the human mind, and to give fair introduction to the fields of art and philosophy." — C. M. WOODWARD.

Plato's Theory. — In the following extract from his Laws, Plato almost appears to have anticipated the Kindergarten and the doctrine of "learning to do by doing."

"According to my view, he who would be good at anything must practise that thing from his youth upwards, both in sport and in earnest, in the particular manner which the work requires. For example, he who is to be a good builder should play at building children's houses; and he who is to be a good husbandman, at tilling the ground. Those who have charge of the education of children should provide them when young with mimic tools, and they should learn beforehand the knowledge which they will afterwards require for their art. For example, the future carpenter should learn to measure or apply the line in play; and the future warrior should learn riding, or some other exercise, for amusement; and the teacher should endeavor to direct the children's inclinations and pleasures, by the help of amusement, to their final aim in life. The soul of the child, in his play, should be trained to that sort of excellence in which, when he grows to manhood, he will have to be perfected."

Sources of a Definition. — Combining, as far as possible, the truths expressed in these various definitions, and considering what the human being is at the beginning of life, what he is at the period of full maturity, and how

he passes from one condition to the other, we may determine, with sufficient definiteness, what education is as a process on the part of the child, what the end to be attained is, what the agencies to be employed are, and what the work of the teacher is.

At the Beginning of Life. — In body the young child is a typical representative of weakness and helplessness. It is utterly unable to provide for any one of its numerous wants. A single instinctive act, absolutely necessary for the support of animal life, is all it has physical power to perform.

In mind the child is as feeble as in body. At first it shows little evidence of intelligence. The senses act very imperfectly. The thinking and reasoning powers hardly give signs of existence. No feelings are manifested higher than those exhibited by the young of the lower animals. The will is powerless to control the movement of a single muscle, or to give direction to the simplest form of mental activity. Language, other than that of inarticulate sounds and cries indicative of physical discomfort, is altogether wanting. Such is the human being at the beginning of life, — a scarcely conscious germ of humanity.

At Maturity. — By and by this weak, helpless, ignorant, half-conscious child appears in the full maturity of perfected manhood or womanhood. In the body, strength, beauty, grace manifest themselves. The mind has become grander and more admirable than the body. Every sense seems animated with a life of its own. The material of knowledge is gathered in through all the gateways of the soul, and transformed into the bread of mental life. The man perceives, remembers, imagines, judges, reasons, with a rapidity quite beyond compre-

hension. He possesses untold wealth of conscious feelings. He loves, hates, hopes, fears; experiences all degrees of pleasure and pain, of joy and sorrow; is touched and moved by the beautiful, the grand, the sublime. The will has gained complete mastery over the whole complex mechanism of both body and soul. He turns himself and all his energies in whatever direction and toward whatever object he pleases. He has acquired language addressed to the eye, to the ear, to the hand, by which all his thoughts, feelings, plans, and purposes can be made intelligible to others.

Man from the Child. — The child and the man seem, to the hasty observer, to have little in common. Yet the man has, in some way, grown out of the child; he is the child brought to full maturity. Whatever appears in the man existed, in germ and possibility, in the weak, helpless child. The germs, the possibilities, have been unfolded, expanded, developed. The body and the soul have shared alike in this wonderful evolution and transformation.

Training. — In connection with this development, and as a necessary part of it, the powers of the child have been trained by constant exercise. An inborn impulse compelled appropriate activity. Pleasure came from action, and the action was repeated over and over again. Repetition produced habit and skill. Thus the man has been fitted for "complete living," and is able "to perform justly, skilfully, and magnanimously all the offices, both public and private," which belong to him in all the various relations of life. He is prepared "to help his fellows and be helped by them."

Knowledge acquired. — While passing through these processes of development and training, the child has

been constantly acquiring knowledge. The acquisition of knowledge has been, indeed, a necessary condition of the development and training of the mind. It has served as means to an end. Without the material of knowledge there could have been no mental activity; and without such activity there could have been no production of habit or skill. But in addition to the value and use of knowledge as the necessary and only means of securing development and training, it is also valuable for practical purposes. It is essential to preparation for "complete living," and to the right and wise performance of the duties of social, civil, and business life. No serious antagonism exists between the knowledge demanded for culture and that required for the successful management of every-day affairs.

What Education includes. — From the brief study of the child and the man, and of the processes by which the one has been transformed into the other, we reach the conclusion that a complete education must include at least three things: —

1. *The proper and complete development of the child.* Development consists in bringing out into the highest possible state of perfection all those powers and capacities which at first exist as mere germs and possibilities in the child. The physical, intellectual, and moral powers share alike in this process. The lower elements of our complex nature are always kept in proper relation and in due subordination to the higher, and the child thus becomes the most and best of which he is susceptible. Development of this sort results in strength and symmetry; no one part or power is perfected by dwarfing or neglecting another. Childhood is ripened into complete manhood.

2. *The thorough training of the child.* By training is meant moulding, fashioning, forming by wisely directed and long-continued activity, by such practice as affords appropriate exercise to every power, both of body and soul. Necessary acts and processes are repeated until they can be performed with the greatest possible accuracy and readiness and with the least possible conscious effort. Training results in habit, dexterity, easy and graceful movement, and in practical skill in doing whatever needs to be done.

3. *The acquisition of knowledge.* Mental development and training can go on only on condition of the acquisition of knowledge, of the reception of material upon which the psychical activities may exercise themselves. The mind is not "first formed, and then informed," or furnished. The forming and fashioning and furnishing proceed together. The process is complex, and at the same time simple; it is difficult to describe, but easy to understand. This acquisition will include that knowledge which will be of service to the child when transformed into a man, and which will be useful to the community and to the state of which he is a member. The acquisition of knowledge will result in intelligence, in acquaintance with one's self, and with the best of everything which the world has to offer in science and art, in history and literature.

The result of all will be an education which prepares "the individual for reciprocal union with society;" such a preparation that "he can help his fellow-men, and in return receive and appropriate their help."

These points include the essentials of a complete education, both theoretical and practical. They are necessary to the best result. But it should be remembered

that, first and chiefest of all, the child is to be made into a man or a woman in the highest sense of these words, — a man or woman in body, mind, heart. Of such men and women the world has great need.

FOR READING.

White's Elements of Pedagogy, Introduction.

Compayre's Lectures on Teaching, chapter i.

Bain's Education as a Science, chapter i.

Rosenkranz's Philosophy of Education, Introduction and Part I.

Davidson's Aristotle and Ancient Educational Ideals, Book I. Introductory.

Barnard's Journal of Education, vol. xi. pp. 13–20; vol. xiii. pp. 7–16.

Joseph Payne's Lecture on the Science and Art of Education, and on the Theory of Education.

Laurie's Institutes of Education, Introduction, and Lectures I. and II.

T. J. Morgan's Studies in Pedagogy, chapter i.

CHAPTER II.

VARIETIES OF EDUCATION.

Divisions of the Subject. — The complex process through which the child passes in reaching full development and maturity forms one harmonious, consistent, and beautiful whole. Nevertheless, for purposes of study it admits of separation into several convenient and natural divisions. The work of each division has certain characteristics of its own, and is carried on by means and agencies, in many respects, peculiar to itself. Hence we have what may be called varieties of education. It should, however, be distinctly understood that all these varieties are only parts of one great whole; and it should also be kept constantly in mind that this whole cannot be complete without the combination, in due proportion, of all these parts. If one variety is crowded partially or entirely out, and another variety is allowed to occupy more time and attention than it is rightfully entitled to, the development must be wanting in symmetry, and the education must be one-sided. It is necessary to give a little consideration to each of these varieties of education, in order to determine as clearly as possible the province and work of schools and teachers.

I. *Physical Education.*

Purposes. — Physical education has reference primarily to the proper development and training of the body. Somewhat less obviously and directly, it has to do with

the development and training of the mind, and with the giving and receiving of instruction. Modern studies in physiology and psychology reveal a most intimate connection between physical conditions and psychical activities and states. The idea of a necessary and perpetual antagonism between the body and the soul is no longer accepted by intelligent students of human nature. The combination of "a sound mind in a sound body" gives us the ideal man. It is coming to be more and more recognized that a well-formed, symmetrically developed, healthy, and vigorous physical organism furnishes the best possible foundation for the most productive intellectual and moral activity.

Men have reached intellectual greatness and high moral excellence with feeble and deformed bodies, and in spite of physical weakness and suffering; but it is only reasonable to presume that under more favorable conditions they would have become still greater intellectually, and even more excellent morally. As a rule, noble and generous souls do not find a home in bodies dwarfed by bad environment, bad training, and bad feeding. Blood vitiated by foul air and thinned by scanty diet of innutritious food cannot produce a brain capable of enduring hard and protracted study, and able to solve difficult problems either in mathematics or morals. Proper physical training — the training, not of an athlete, but of an average man — is beginning to be held in just esteem by both students and teachers.

In Ordinary Schools.— It is not to be asked or expected that the ordinary common or high schools shall make a specialty of physical education. Of necessity, the teachers of these schools will be compelled, for the present, to give this a somewhat subordinate place

among their multifarious duties. The "signs of the times" indicate that the near future may raise it to the position which it can justly claim.

Reasonable Demands. — Nevertheless, even now, some things may rightfully and imperatively be required of all teachers in all grades of schools. They must have as much as an elementary knowledge of physiology and hygiene, and must be acquainted with the laws of health as far as they relate to food, drink, clothing, cleanliness, and exercise. They must know when school buildings are properly located, arranged, lighted, warmed, and ventilated, and when seats and desks are of right form and height.

Schools and teachers cannot be held guiltless if stooping shoulders, hollow chests, pale cheeks, defective eyes, and general debility and listlessness are common results of their arrangements and management. The very least that can be demanded of schools and teachers, from the primary grade to the university, is that they shall do no harm to the bodies of the children and youth committed to their care.

Herbert Spencer. — There is practical wisdom as well as historic truth in these words of Herbert Spencer :

"In primitive times, when aggression and defence were the leading social activities, bodily vigor with its accompanying courage were the desiderata, and their education was almost wholly physical; mental cultivation was little cared for, and, indeed, as in our own feudal ages, was often treated with contempt. But now that our state is relatively peaceful, now that muscular power is of use for little else than manual labor, while social success of nearly every kind depends very much on mental power, our education has become almost exclusively mental. Instead of respecting the body and ignoring the

mind, we now respect the mind and ignore the body. Both of these conditions are wrong. We do not yet sufficiently realize the truth that, as in this life of ours the physical underlies the mental, the mental must not be developed at the expense of the physical. The ancient and modern conceptions must be combined."

Marion.— There is a large measure of truth in this extract from F. Marion :—

"Physical perfection serves to assure moral perfection. There is nothing more tyrannical than an enfeebled organism. Nothing sooner paralyzes the free activity of the reason, the flight of the imagination, and the exercise of the reflection, nothing sooner dries up the sources of thought, than a sickly body whose functions languish and for which every effort is a source of suffering. Then have no scruples; and if you would form a soul which is to have ample development, a man of generous and intrepid will, a workman capable of great undertakings and arduous labors, first, and above all, secure a vigorous organism, of powerful resistance and muscles of steel."

II. *Intellectual Education.*

Intellectual education includes the proper and symmetrical development of all the powers of the mind, and the cultivation or training of these powers to the highest attainable degree of perfection. It necessarily involves the acquisition of knowledge and the formation of habits. To a large extent it fashions and furnishes the soul; but the two processes cannot be separated. The soul is formed only as it is supplied with material of knowledge from without, upon which it exercises its powers, and out of which it builds itself up by its spontaneous activity.

Intellectual education may be general and liberal, having regard chiefly, though not exclusively, to the perfection of the individual and to his personal enjoyment; or it may be special and professional, having particular regard to the interests of the community, and to the service which the individual may render to his fellows. As intellectual education is the main business of the schools, it will receive more consideration further on in our work.

III. *Moral Education.*

Purpose.— The purpose of moral education is to secure right conduct on the part of men and women in all the relations which they may sustain in life, — right conduct in the family, in the school, in the community, and in the state. In order to secure such conduct, it is necessary that men be intelligent, — that is, that they know right from wrong; it is also necessary that they have a disposition to choose the right in preference to the wrong.

Substance of Moral Education.— The moral education of the young, therefore, must consist essentially in making them intelligent in respect to responsibilities, obligations, duties, and rights, and in making them disposed to recognize and accept responsibilities, to meet obligations, to do all known duties, and to have regard for their own rights and the rights of others. In this place we are not considering how this work may be done. We are only seeking to discover what the work really is, and to inquire whether it should be attempted by teachers in the public schools.

Obstacles.— Candor compels the admission that there are real obstacles in the way of giving efficient moral

instruction and training in public schools. The religious obstacle presents itself first, and is the most formidable. It is believed by many that no productive moral instruction can be given without at the same time giving religious instruction. In their minds, morals and religion are inseparably bound together; and to them religion consists mainly of the "dogmas and practices" of some particular body of Christians. If this be true, there is no alternative, and further discussion is useless. Moral teaching in the schools is an impossibility; for it is generally agreed that religion, in the ordinary sense of the word, shall not be taught in schools supported by the state.

For considerable time there has been a disposition on the part of those charged with the management of public educational affairs to accept this conclusion. Little moral instruction of any sort has been provided for. The whole matter has been relegated to the home, the church, and the street.

Results.— The results, so far as they have appeared, have not been such as to commend the wisdom of this course. It is pretty generally acknowledged that intelligence alone does not insure right conduct. An acquaintance with the higher mathematics does not make it certain that the accounts of the book-keeper will be kept correctly and honestly. A knowledge of science, history, and literature does not guarantee truthfulness, fidelity, and a nice sense of honor, either in public or private life. Without doubt, a high degree of intellectual culture and refinement has a direct influence in banishing many of the lowest and most debasing forms of vice and crime, but, in the absence of moral principle, it introduces and fosters other forms.

The Demand. — An increasing demand for practical and efficient moral instruction and training is making itself felt in many quarters. If existing institutions and agencies cannot meet and satisfy this demand, others will be created. The conviction that something must be done has led to serious inquiry as to the possibility of providing for instruction in practical ethics in the public schools, without teaching the subject of religion in such a way as to trespass upon the rights of even the most sensitive conscience. It is believed by many earnest friends of the schools that this is practicable. Some attempts have been made by various writers to show how this may be accomplished.

A discussion of specific methods of ethical instruction does not fall within the limits of our immediate purpose at this point. The inquiry here is only as to the desirability and practicability of such instruction, and its general character.

Standpoint of Instruction. — It is evident that moral instruction cannot be given in the public schools from a religious standpoint. It is insisted, for obvious reasons, that positive requirements in respect to studies and instruction in all educational institutions supported by the state must be purely secular. We must, consequently, either accept the conclusion that instruction in ethics cannot be given in such schools, or assume that morality and morals can be taught "in complete separation from religion and theology." Recognizing fully the serious practical difficulties to be encountered, we nevertheless adopt this assumption with a fair degree of confidence.

The truth is, that the conduct of most men is not very largely influenced by their theories in relation to the

origin of the moral law, or in respect to the sanction by which its requirements are to be enforced. There is general agreement as to practical morality; that is, as to how men should behave, and how they should conduct themselves in the family, in society, in business relations, and as citizens of the state. It is with conduct that we are concerned in the schools, and not with theories of morals.

Testimony. — "When, then, we have in mind as a subject for public school instruction, not the science of ethics, not the speculations of moral philosophers, but the orderly presentation of the common facts and laws of the moral life which no one in his senses disputes, we perceive how the religious or theological difficulty at once disappears, to a large degree." — NICHOLAS PAINE GILMAN.

"We have seen that we cannot teach religion in the public schools. Must we, therefore, abandon altogether the hope of teaching the elements of morals? Is not moral education conceded to be one of the most important, if not the most important, of all branches of education? Must we forego the splendid opportunity afforded by the daily schools for this purpose? Is there not a way of imparting moral instruction without giving just offence to any religious belief or any religious believer, or doing violence to the rights of any sect or of any party whatsoever? The correct answer to this question would be the solution of the problem of unsectarian moral education. The answer, as I conceive it, is this: It is the business of the moral instructor in the school to deliver to his pupils the subject-matter of morality, but not to deal with the sanctions of it; to give his pupils a clearer understanding of what is right and what is wrong, but not to enter into the question why the right should be done and the wrong avoided. . . . He is not to explain why we should do the right, but to

make the young people who are entrusted to his charge see more clearly what is right, and to instil into them his own love of and respect for the right. There is a body of moral truth upon which all good men, of whatever sect or opinion, are agreed. It is the business of the public schools to deliver to their pupils this common fund of moral truth."— FELIX ADLER.

Intuitions. — It should be said that those of us who believe the ideas of right and justice to be among the intuitions of the human soul may, without offence, appeal for a sanction of much of our moral instruction to the understanding and conscience of the pupil himself. Without argument, every sane and properly constituted mind feels and acknowledges that it is right to tell the truth and to act honestly and justly, and that to speak or act otherwise is wrong.

IV. *Industrial Education or Manual Training.*

Criticisms on Schools. — The complaint has been repeatedly made, in some quarters, that the education of our schools creates in the pupils an aversion to those employments which require manual labor. It is affirmed also that scholars go out from the schools positively unfitted, in body and mind, for the practical duties which their circumstances require of them, and that, in consequence, they become unproductive and useless members of the community. Such persons are constantly pushing themselves into the lower ranks of professions which are already overcrowded, and for which they have no natural or acquired adaptation.

Demands. — It is for this reason demanded that a closer connection shall be established between the instruction and training of the schools and the real

business and industries of actual life. It is said that pupils should be taught, to some extent at least, what they are to practise after they leave school, should learn as much as the rudiments of some of the most common trades and arts. A portion of the school time should be taken from books and recitations and given to the acquisition of manual dexterity and mechanical skill.

Obstacles. — It is conceded that this demand has some substantial basis, but it involves several grave considerations. Among these is the question of expense. This alone will prove a formidable obstacle in the way of introducing anything which can be properly called manual or industrial training into the common schools, or into the schools of villages and small cities. In large cities, and in many of moderate size where conditions are favorable, institutions will be established for instruction and training both in the mechanical and fine arts. Many such have already been founded, and the number will, without doubt, increase. All friends of education will favor the opening of schools of this kind where they can be adequately supported.

It still remains to be determined exactly what and how much shall be included under the term "Industrial and Manual Training," or what estimate shall be put upon its value. That it has great value will not be questioned. The claims made by some of its enthusiastic advocates may be surely called extravagant. It will accomplish much good, but it will not immediately introduce an educational millennium.

Opinions. — "The aim of the Manual Training School is not to turn out finished products, like the factory. It finishes no article for the market, except its systematically trained

boys and girls. Its whole object is educational. Its great aim is to develop systematically both the mental and physical capacities of every pupil. While doing this, it indirectly elevates the whole plane of industrial activity, inculcating in the youthful mind a higher respect for labor and the laboring man." — H. W. COMPTON, Toledo, Ohio.

"It is already proven that the Manual Training School has a tendency to keep boys in the High School. Too many bright boys leave school and go to work at an early age, not because they are lazy, but because the desire to be doing something, to be a part of the great business world, overpowers their inclination for strictly book knowledge. Give such boys an opportunity to work off this surplus energy in the shop and draughting-room, where they can feel themselves employed, and you will have High School classes graduating something like an equality of members between the sexes. Many boys who have gained a certain amount of information — information enough to begin to appreciate how much there is to learn — will desire more knowledge; and we shall see more of the right class of young men at polytechnic schools, preparing themselves to apply the arts and sciences to the practical world." — G. S. MILLS.

"Manual training, in the strict sense of the term, would mean simply the training of the hand; but as currently used with reference to education, the words indicate such employment of the hand as will at the same time train the eye to accuracy and the mind to attention. The scientific element, or the teaching of sciences pure and simple, is not necessarily involved in the expression. As, however, pure science can scarcely be taught without looking somewhat towards its application, so manual training cannot be made an effective educational process, except by constant reference to the broad foundation in the mathematical, physical, and natural sciences upon which it rests." — LEGISLATIVE COMMISSION, Penn.

"That bodily training must be associated closely with mental training in the production of the useful men and women of the future, I am more than ever firmly convinced. I believe that even in the immature stage in which we are now observing manual work, if we will look for results, not in the objects made by the hand, but in the character of the youthful worker, we shall be able to see signs of the best results." — SUPERINTENDENT, Jamestown, N. Y.

"It is now generally recognized that manual training is an important and necessary adjunct to the education of the schools, and that mind and eye and hand must together be trained in order to secure symmetrical development. Manual training aims at the broadest, most liberal education. While developing and strengthening the physical powers, it also renders more active and acute the intellectual faculties, thus enabling the pupil to acquire with greater readiness, and to use more advantageously, the literary education which should go hand in hand with manual training." — PRATT INSTITUTE, Brooklyn, N. Y.

"This is the difference between this school and a trade school: a trade school is one where some special branch is taught — a school where plumbing or some other special industry is taught. Surely, ill-fed boys of twelve and a half or thirteen who never saw a hammer or a chisel are not fit to be set at these trades. Let them, however, go into a school, not where a trade is taught, but where they are taught to use tools, and to draw, and to continue their ordinary education, and when they get to be fifteen or so, — and then they are not too old to enter life, — what have they learned? They have the foundations laid stout and deep, — the foundations of intelligence and skill; for they know the principles, not of one trade, but the principles that underlie many trades." — HEBREW INSTITUTE, New York.

"Manual training is founded upon the claim that it gives a more complete education than is afforded by the course of

instruction now followed in the schools. It undertakes so to modify the existing methods of training as to yield an education that shall make the graduate of the public school a more fully developed and efficient member of society. The instruction given in the schools is too one-sided. It cultivates chiefly the intellectual powers, to the neglect of the physical and moral. Lord Bacon long ago stated the object of education to be 'the cultivation of a just familiarity betwixt the mind and things.' No better definition of the office of the teacher could be given. To a very large extent, the schools neglect the training of those powers which bring the mind into true relations with its environment. Educational reformers for nearly three hundred years have been seeking to remedy this defect. The introduction of object-lessons and of science instruction were well-meant efforts in this direction, and manual training is, in fact, nothing more than the further extension of the same principle. It seeks to train the hand and eye, not for the purpose of superseding the action of the mind, but as the efficient agents of the mind in gaining a truer and ampler knowledge of the world." — JAMES MCALISTER.

FOR READING.

Compayré's Lectures on Teaching, chapters ii. and iii.

Rosenkranz's Philosophy of Education, Second Part.

Report of the Commissioner of Education, 1888–89, vol. i., pp. 592–610.

Monographs of the Industrial Education Association, 1888–1890; topic: Manual Training, etc.

Spencer's Education, chapters ii., iii., and iv.

Huxley's Essays. Science and Education. Lectures iv and xvi.

T. J. Morgan's Studies in Pedagogy, chapter ii.

CHAPTER III.

MATTER AND DIRECTION OF OUR PRESENT STUDY.

Definition. — From what has preceded, we reach the conclusion that general education may be defined as the symmetrical development and proper training of the whole human being. Special or professional education may be defined as development and training in some particular direction and for some special purpose. The process, whether general or special, necessarily includes the giving of instruction on the part of the teacher, and the acquisition of knowledge on the part of the pupil.

Regard for the Best in Man. — Due regard will always be had to the higher elements in human nature. The lower will be kept in proper subordination to the higher, and will be cultivated with reference to the service which they can render in bringing the whole man to the highest attainable state of perfection. In not a few cases, inherited peculiarities will need to be partially or, if possible, completely eradicated. Other traits will demand careful attention and fostering care, in order to render the character truly symmetrical. The teacher will recognize the fact that ordinary human nature, as found in the schoolroom, is not altogether of the ideal type.

Regard for the Interests of Society. — Training, both general and special, will have regard to the interests

and legitimate demands of society and the state, as much as to the perfection and good of the individual. The truth will be kept in mind that the individual man, whether savage or civilized, is not complete in himself. He must, consequently, be educated to give and to receive; must be prepared so "that he can help his fellow-men, and in return receive and appropriate their help." This will be the natural result of true development and right training.

Matter of Study. — Accepting these general statements as to the substance of education, we have next to inquire what education offers as matter for study on the part of one preparing to teach. This is necessary, in order that our work may take definite form and direction, and that time and energy may not be wasted. We shall assume that there is a science of education, without assuming that the science has yet taken complete and permanent form, or that it is at present susceptible of satisfactory definition.

Education as a Science. — It will be allowable to define education provisionally as the science which treats of the right development, training, and instructing of the human being. This definition, however, is of little value to our work. It is important to understand what branches of study the science must include. It will be safe to say that it must embrace all subjects which relate to the nature of the being to be educated, the processes to be employed, and the means to be used. Within the narrowest limits it will include: —

Study of the Human Being. — (1) A knowledge of the human being; that is, first, a knowledge of the body, especially of those organs which serve as avenues of communication between the mind and the outer world;

and, second, a knowledge of the powers, capacities, and modes of activity of the soul, as far and as fully as these can be known.

Laws of Development, etc. — (2) A knowledge of the laws relating to the growth, development, and training of the human being; that is, a knowledge of the conditions under which the processes of development and training, both of body and mind, are best carried on, and under which the various modes of psychical activity exhibit their greatest vigor and productiveness.

Knowledge of Means, etc. — (3) A knowledge of the means, methods, and appliances by which the work of the teacher in helping to develop, train, and instruct his pupils can be made most effective.

Study of the Body: Physiology. — Consequently, the student of the science of education must begin with a study of the body; must have at least an elementary knowledge of physiology and hygiene; must know how to give the physical organism proper development and training, and to keep it in a healthy and vigorous condition. Especially must he be acquainted with the nervous system, and its relation to the phenomena of mind. The connection between the action of the nerves and some modes of psychical action is so intimate that the one must be understood in order to interpret the other.

Study of Mind: Psychology. — The study of the body prepares the way for an intelligent study of the mind. The student must master as much as the elements of psychology. The ordinary teacher will not be greatly profited in his work in the school by the study of psychology simply as a profound science. It is rather practical psychology that he needs, — psychology that begins with the study of self, with an examination and inter-

pretation of one's own psychical life, with the activities of one's own soul as manifested in consciousness. Starting with this knowledge of self, he is prepared to study psychology by observation of children, but not of children exclusively. The activities of more mature minds offer a wide field for most profitable study. The world of living men and women presents an open book to him who has learned to read it.

Compayré. — M. Compayré says: —

"Just as inward observation is the basis of scientific researches into human nature, so it ought to remain the principal instrument for the teaching of psychology. Of all the sciences, psychology is the one which is best adapted to be taught by the same method by which it was discovered, — by a perpetual return of man upon himself. But it is also proper not to neglect the other sources whence may be drawn a more complete knowledge of human nature. The teacher of psychology, while inviting the pupil to observe himself, will also lead him to observe his comrades and men in general. If it is not really possible to penetrate directly into the consciousness of his fellows, he may at least divine their thoughts and emotions through gestures and signs, — the language, in a word, which expresses them.

"Psychology, properly so called, the object of profound philosophic research, is one thing; while the psychology for school use, the psychology that is taught, is quite another. The teacher of psychology will, then, recollect at the very start that in the science which he teaches there is a choice to be made between discussions that are merely scholarly, or knotty, useless facts, trifling details, and really useful questions which are of practical interest, and which at the same time, by their simplicity and clearness, are within easy comprehension of younger minds. Even these questions he will not profess to fathom or

to exhaust; he will not discuss them as a scholar who ventures to the very limits of his researches, but he will make them as light as possible to his pupils, and will grasp only their substance, their essential points. In a word, he will recollect that he is not a thinker who is toiling and speculating for the advancement of pure science, but a teacher who selects, who appropriates, who simplifies scientific notions for the instruction of his pupils."

Logic. — The study of psychology naturally leads to the study of certain related sciences, a knowledge of which is necessary to the student of education Among these is logic. Hamilton regards this as "only a fragment of the general science of mind," treating of the laws of thought.

The study of psychology proper makes us acquainted with the thinking activities and with their general nature. Logic makes us acquainted more specifically with the modes in which these activities manifest themselves, with the directions which they naturally take, or, in a word, with the substance and forms of thinking and reasoning.

It is to be remembered, however, that the logic which will profit ordinary students of education is not the profound science, with its subtle distinctions and its cabalistic formulas, but rather logic of a simpler and more practical character, partaking more of the nature of art than of science. It will consist largely of inferences and deductions from facts gathered from careful and repeated observation and analysis of one's own psychical processes, and also from watching and studying the early attempts of children to draw inferences, to make deductions, and to arrive at conclusions by incipient processes of thinking and reasoning.

The child does not consciously learn the processes of induction and deduction. The mind moves spontaneously in certain directions as soon as there is occasion for such movement. It moves because it cannot help moving; it acts in a certain way because, from its very constitution, it cannot do otherwise. The so-called laws of thinking are only more or less formal statements of the modes in which the mind naturally manifests its power of connected and consecutive thinking. The logic which the teacher of the common school needs to understand consists mostly of laws of this sort, and of practical suggestions as to their application in the schoolroom and in the class.

The teacher will use his logic to the greatest advantage by leading his pupil to recognize the fact that quite unconsciously he is conforming to the laws of logic in his every-day work. When the pupil's attention is directed to the matter, he readily discovers that his thinking expresses itself in the form of propositions, or sentences; that these propositions consist of two parts, which he has been accustomed to name subject and predicate. A little further examination enables him to see that each expresses an idea, or notion, and that his thinking, in *substance*, consists in comparing these ideas, and deciding as to their agreement or disagreement. If they agree, he unites them; the union being effected, in many cases, by employing some form of the copula verb "to be," and the separation by inserting "not," or some other word of negation. In logic, such decisions are named "judgments." When ideas are united, they are called "affirmative judgments"; when disunited, "negative judgments." Other divisions and subdivisions may be taught, if circumstances make it desirable.

The object here, as previously stated, is not to give an outline of logic, but only to suggest the kind of logic which will be of most value in the ordinary school-room.

The comparison of ideas, resulting in the formation of separate and unrelated judgments, is naturally followed by the comparison of connected and related judgments, resulting in the formation of new judgments. This mode of thinking is called "reasoning." In *form*, it is the comparison of judgments; in *substance*, it is the process of getting new knowledge by the proper arrangement and use of knowledge already acquired. The pupil will recognize this when his attention is directed to his observations and experiments, and to his own psychical processes. For instance, the child smells a rose, and says this rose has an agreeable odor; he does the same with another, and still others; until finally he affirms that all roses have an agreeable odor. This is an example of what he is constantly doing in his dealings with the objects about him. It is the form of the child's earliest reasoning, since his first notions are of individuals. This is called "induction," — a process by which the mind proceeds from particular cases to general conclusions, and from individual objects to classes.

In this form of reasoning, the pupil is peculiarly liable to fall into errors, by drawing his conclusions or making his inferences from an examination of too few individual cases or objects. For illustration, one apple is tasted, and another, and several others, by a child unacquainted with apples. These specimens happen to be all sour; hence the child announces the conclusion that all apples are sour. By and by a sweet apple is tasted, and the previous conclusion has to be revised and cor-

rected, in consequence of the extension of his observation and the increase of his knowledge.

The mind, having reached general truths and the idea of classes by the inductive process, naturally and spontaneously reverses the direction of its movement, and proceeds to apply its general truths to new particular cases, and to group new individual objects into the classes already formed. In this way, each new acquisition takes its place among previous acquisitions, and the whole mass of knowledge, as it accumulates, becomes systematically arranged and consolidated. This process is known as "deduction," and consists in applying general truths to special cases, and in gathering large numbers of similar individuals together under one common name.

These two processes are equally spontaneous, and are complementary one of the other. The judgments employed may be arranged in a regular order, forming what is called "the syllogism;" but this does not find large place in the work of the ordinary schoolroom. Illustrations of syllogisms and their uses may be found in any elementary logic. The present purpose is to indicate some of the advantages which the teacher will derive from an acquaintance with the modes of the mind's spontaneous movements in the processes of thinking and reasoning. It is unnecessary to teach the processes. It is the business of the instructor to guide the pupil, to some extent, in the performance of these natural psychical acts, and to guard him against immature and hasty conclusions, and against the danger of cheating himself, or of being cheated by others, by means of fallacies of various kinds.

Ethics. — Another of these related sciences is ethics,

which treats of right character and right conduct. While the teacher should be intelligent enough to have some acquaintance with ethical theories, he is chiefly concerned with practical ethics, or morals. The duties and obligations of every-day life fall within the scope of school instruction. It will not be necessary to investigate and discuss the ultimate basis of moral distinctions in order to determine that children should be obedient at home and in the school; that all men everywhere should yield obedience to lawful authority, should speak the truth, should be honest and just in their dealings with one another, and should abstain from violence and wrong-doing. Sufficiently imperative sanctions for good conduct are found in the common-sense of mankind, in the teachings of human experience, and most of all in the intuitions of the human soul. It is not necessary to prove to a pupil, by an appeal to abstract principles or to divine commands, that he ought not to lie, or steal, or cheat, or do personal harm to his companions. An appeal to his own intuitive perceptions of right is all that the case requires.

What the teacher especially needs to know is how to make such appeals most skilfully and effectively. Much may be learned from the study of books; but a study of practical ethics in actual every-day life, where the inner forces which give direction to human conduct reveal themselves, will be more likely to lead to a discovery of the avenues by which the conscience may be reached most readily and surely.

Æsthetics. — The study of ethics, which treats of the good, naturally leads to the study of æsthetics, which treats of the beautiful. There is an intimate relationship between the two. It is true that beauty is not

goodness; but all goodness has in it something of beauty, and consequently something worthy of admiration and love. Love of the beautiful should kindle in the soul love of the good; and in many cases it will do so, provided the good and the beautiful are rightly presented, and the relationship between them is made evident.

A study of abstract and abstruse theories in respect to beauty and the beautiful will not be of much practical value to the teacher of a common school; but it is of value to such a teacher to know how to make the good attractive rather than repulsive, so that it will appeal to the susceptibility of the beautiful in the soul of the child. The beauty which touches and moves the child must be embodied in objects or acts, in forms and colors, in movements of the body, in expression of the features, in tones of the voice. The beautiful, like the good, must become concrete in order to be comprehended and felt; it must be instinct with life.

First of all, the life and character of the teacher should be such an embodiment of beauty. Real beauty of soul has power to transform, in some degree, even the face itself, and to render the person beautiful. There is truth as well as beauty in the language of Dr. Huntington in his essay on "Unconscious Tuition": —

"Can a man look otherwise than nature made him to look? Can he reconstruct his features? Can he resolve his face into beauty by a purpose? I reply, nature made his countenance to reflect the spirit of his life. It is a common maxim that some faces, plainest by the rules of classic symmetry, are noble with moral dignity, and radiant with spiritual light. The faces we love to look at over and over again must be the really beautiful faces; and those are the faces

of lovely persons. This kind of beauty, the only real kind, is producible. The soul, such as it is, will shine through. But the completeness of that transformed expression will be seen only where the long patience of self-control, and the holiest sincerity of love, and the slow triumph of unselfish principle, have wrought their interior work, moulding the inner man into a nobleness that the outward shape may honestly image."

Power of such Beauty. — It is the science and art of such beauty that the teacher needs most of all to study. Such beauty transforms, not the face and features of the teacher only, but the schoolroom and its surroundings, and leaves its impress upon the hearts and lives, upon the character and conduct, of the young who are so fortunate as to come within the sphere of its influence.

The studies thus far considered are all very closely related to psychology, — are, in fact, concerned chiefly with an exposition of the modes in which certain powers and activities of the soul find expression, and in considering some of the methods by which these powers and activities may be reached from without, and may be developed and trained to the best advantage.

Other Studies. — Almost all other branches of study make connection at some point with psychology, and thus become of immediate service to the student of education.

Language. — Language constitutes the dress in which thought clothes itself so as to become visible and presentable. Consequently, laws of thinking determine forms and modes of expression, and embody themselves in the laws of grammar and rhetoric. For this reason, the study of grammar and rhetoric and literature leads

back and up to the study of the soul itself as manifested in its modes of action.

History and Biography.— The study of biography and history leads even more directly to the study of mind. "History," as M. Compayré has well said, "is nothing but psychology in action. Historical events are to psychology what experiments are to physics. They show us the human faculties acting under particular circumstances, with the relief and scope given them in the case of certain men of exceptional force of mind and character."

The psychology of history, however, is often very complex. The actors are numerous. The field of observation is wide. It is frequently a matter of extreme difficulty for historians themselves to trace and disentangle the individual threads of thought, motive, or purpose which are twisted together in the confused mass of events of which history treats. The psychology of biography is usually more simple, since its purpose is to present the movements of a single mind. It enables us to discover the origin of these movements, the motives which prompted them, the influences which turned them in some particular direction, and the results which followed. For the ordinary student, especially in the early stages of his progress, the psychological study of biography will be more profitable than a similar study of history.

Second Division. — The laws relating to the growth, development, and training of the human being and the laws relating to psychological activity, which constitute the second division of the matter of our study, consist of inferences, deductions, and conclusions drawn from the truths and laws found in psychology and its kindred

sciences. These will be considered in later chapters, and will form the basis of the discussion of the applications of psychology to methods of instruction and to the general work of the teacher. This division embraces the subject-matter of the science of education, or pedagogics, so far as this matter appears in our work.

Third Division. — The third part — the study of means, methods, and appliances — unites itself closely with the second. In fact, the two can hardly be treated separately. The laws of teaching are simply deductions or inferences from the laws of development and the laws of psychical action. Properly formulated, they are brief descriptions of the processes or methods of teaching, and are essentially so many rules for the guidance of the instructor. They are the substance of pedagogy, or the art of teaching, so far as this can be made a matter of study apart from actual practice.

An Art. — The simplest definition of an art is that which makes it *consist of the processes employed to reach some definite end.* These processes grow naturally out of the underlying principles of the correlated science. Consequently, the art of teaching may be defined as the practical application of the principles of the science of education. In simpler terms, it consists of the processes employed in the development, training, and instructing of the child.

Methods of Learning the Art. — The student of any art should, if possible, first become acquainted with the principles of the correlated science. Having made such acquaintance, his complete mastery of the art will be best obtained by three successive steps.

First Step. — He will first study the natural inferences or deductions which he has himself made, or which have

been made by more profound students, from the principles of the science upon which the art is based. This, as already implied, is little else than a study of practical directions or rules for the right performance of certain processes, before the processes have been performed. At first sight this seems to be a violation of sound pedagogical theory. It may be urged that rules, in all cases, should be drawn from an investigation of the processes themselves after they have been several times repeated. In the ordinary work of the schoolroom this is generally true; but it is not true in the original study of methods on the part of the teacher from a scientific standpoint.

Rules of teaching derived from an examination of processes are empirical; no reason can be given for them except that they "work." Correct results are reached by following them; therefore they are good. The student of pedagogy is not satisfied with mere empiricism, even though it reaches desired ends. He seeks for rules for which the principles of science give adequate reasons. Such rules can be learned and their applications studied before observation or practice. Practice begins with the application of these, and rightly conducted experiments verify them. They direct the processes, and are not originally deduced from them.

Second Step. — The second step in mastering the art of teaching, as in mastering any other art, consists in careful, protracted, and intelligent observations of the work of skilled teachers. The observation of the work of one novice by another novice has little value. A model teacher in a model school affords the best opportunity for profitable observation. But even observation needs to be directed. Careless "looking on" yields no good

results. The observer should be taught to distinguish the essential from the accidental, to separate method from device, to look beneath the manner of the teacher for the real work performed. The character of the observation can be determined by the report which the observer should be required to make.

Third Step. — The third and final step consists in practice teaching under proper conditions and subject to wise and discriminating supervision and criticism. "Things to be done" can be fully learned only by "doing them;" but the doing should be preceded by a clear conception of what is to be done, and by some instruction in respect to the method of working. Care should be taken that practice in teaching does not degenerate into mere imitation of some model teacher. Imitation never produces a high degree of excellence, and it is fatal to anything like genuine freedom and ease of action. One cannot walk in the footprints which another has made, and retain naturalness and grace of movement. The general method of action may be adopted and, to some extent, even imitated; but the devices employed and all that is included under the somewhat indefinite term "manner" must be one's own. The teacher who expects to excel in his art must respect his own individuality in his practice work as well as in his thinking and speaking.

Relations. — The relations of the science of education to the other sciences named, and of the art of teaching to the science of education, may be indicated as follows: —

I. *Basis of the Science of Education.* Physiology, Psychology, Logic, Ethics, Æsthetics, Language and Literature, History and Biography. The study of these

sciences, especially the first two, is a necessary preparation for studying the science of education.

II. *The Science of Education, or Pedagogics.* This consists of general principles or truths relating to the human being and to the nature of knowledge deduced or inferred from the sciences before named, properly formulated and arranged. These principles may be called laws of mental action or laws of mind. The study of these is a study of the science of education.

III. *The Art of Teaching, or Pedagogy.* This consists of inferences or deductions from the laws of development and the laws of mind, which are essentially rules or directions describing the processes of the art, and serving to guide the teacher in his work. The study of these is the first step in the study of the art of teaching.

In the chapters following, the purpose will be to make, first, a very brief outline study of man, and then to consider in connection the matter belonging under the second and third divisions, thus uniting, as far as practicable, an elementary study on the science of education with the study of the art of teaching.

FOR READING.

Page's Theory and Practice of Teaching, first five chapters.

Compayré's Elements of Psychology, Introduction.

Fitch's Lectures on Teaching, Lecture I.

Sully's Teacher's Handbook of Psychology, chapter i.

Rein's Outlines of Pedagogics, Part II. Theoretical Pedagogics.

Herbart's Introduction to the General Principles of the Science of Education.

CHAPTER IV.

STUDY OF THE CHILD.

First, the Body.

AN elementary knowledge of physiology and hygiene is presupposed. It will, consequently, be sufficient for our purpose to review briefly some parts of the nervous system. The relations of this system to manifestations of mind are so intimate that the psychical can hardly be understood without an acquaintance with the physical.

The Brain. — The brain, the great centre of the nervous system, appears to be the immediate organ or instrument through which the soul manifests itself and makes known its energies and activities. The exact nature of the connection between the mind and the brain remains an unsolved mystery. Physiological psychology thus far sheds no light upon this problem. Ascertained facts may be accepted, but theories and hypotheses are of little value. Brain is not mind, and neurology is not psychology, although at certain points they seem to touch each other, and the one helps to explain the other.

The Nerves. — From the brain and spinal cord small threads or cords called nerves extend to all parts of the body. Each nerve is composed of a considerable number of very minute fibres closely united. The peculiar property of the nerves is the susceptibility of

being excited, irritated, or impressed, together with the power of transmitting this excitement or impression. Some nerve-fibres carry inward to the brain the impression made upon their outer ends by external objects and influences. These are called afferent, in-carrying or sensory nerves. Other fibres convey impressions or impulses from the brain to the various parts of the body. These are named efferent, out-carrying, or motor nerves.

Special Nerves. — The special nerves of taste, smell, sight, hearing, and touch are those which most concern the student of mind. It is presumed that the structure and functions of these nerves and of the organs in which they terminate are generally well understood. Unlike the other nerves of sense, the extremities of the nerves of touch are widely distributed, reaching all parts of the body. Touch is also closely related to muscular movements, through which we get notions of weight, distance, form, and many others.

The senses have often and appropriately been called "the gateways of the soul." Through these avenues the soul and the external world come into communication and relationship. The mind hears through the ear, sees through the eye, tastes and smells through the proper organs. Each of these special nerves, excepting the nerves of touch, is susceptible of only one sort of excitement or irritation, and is able to convey only one kind of impression, and consequently brings to the mind only one form of knowledge.

Acquired Power. — By a most beneficent provision, however, if one of the senses is destroyed, the others can, to a considerable extent, though not fully, supply its place and perform its functions. Touch does wonders

for one deprived of sight, but sight only can give us any real notion of color; taste alone furnishes knowledge of flavors, and smell alone of odors, though these two senses are very closely related in their functions. It might be said, with much of truth, that each sense makes us acquainted with a world of its own, and that an additional sense would introduce us to a new world, just as the loss of a sense contracts the world in which we live. The training of the various senses to accuracy and rapidity of action is an important part of the process of early education. When properly cultivated, they are not only instruments for the acquisition of the material of knowledge, not merely gateways opening from the inner world of mind out into the world of material things, but also sources of legitimate and exquisite pleasure and of rational enjoyment.

Reservoir of Energy, etc. — The nervous system, as a whole, may be regarded as a reservoir for the accumulation of energy, and a complicated and beautiful organism for the distribution and use of this energy for the service of the soul. The accumulation takes place in the nerve-cells mainly during periods of partial or complete repose; and the distribution is effected by the action of excitants or stimuli of various kinds. These may be external, exerting their influence upon the organs of the senses, or internal, consisting of ideas, emotions, volitions, which in some mysterious way excite the out-carrying nerves, and, indeed, the whole nervous apparatus.

The Mind, or Soul.

Explanation of Terms. — The words "mind" and "soul" are employed without distinction. The soul is

the I, myself, of each individual, — that which knows and feels and wills. The science which treats of the soul is Psychology.

Matter of Study. — Of the substance of the soul we have no knowledge. It is assumed to be immaterial and spiritual, capable of existing separate and apart from the body. We study, not the soul itself, but its manifestations, its states and activities. These may be called the phenomena of soul, or mind.

Knowledge presupposed. — As some knowledge of elementary psychology is presupposed, only a brief outline of the psychical activities and states will be given here, and an effort will be made to present this outline in common every-day language, as far as the nature of the subject will permit, even at the risk of being regarded as unscientific.

Begin with Self. — The study of the mind must begin with the study of self. Manifestations of mind in others can be understood and interpreted only by reference to one's own experiences. We discover that certain thoughts and feelings cause us to speak certain words, to do certain things, to take certain attitudes, to make certain movements, to exhibit certain changes of countenance, to present a certain general appearance. We conclude that these words, acts, movements, attitudes. changes, and appearances indicate the same thoughts and feelings in others. The influence of temperament, of education, of habit, of individual peculiarities must be taken into account in all cases.

Study of Others. — The study of self must be supplemented by the careful study of the manifestations of mind in our own associates, friends, neighbors, indeed in all with whom we come in contact. Parents and

teachers have peculiarly favorable opportunities to observe the progressive development of the minds of children. Such observations will have practical value, provided they are made with sufficient intelligence and care, and extend over sufficient length of time and over a sufficient number of individuals. Considerable acquaintance with the ordinary modes of mental activity, with the influence of surroundings, and with individual peculiarities is an essential pre-requisite to profitable observations.

Consciousness and Sensation. — As previously stated, the sensory nerves receive impressions or excitations from external objects, and transmit these to the brain. In some way the mind becomes aware of such impressions; that is, it is influenced or affected by them. It is said to be conscious of them; and consciousness is defined, or described, as the activity of mind knowing itself, and knowing its own states and activities; or the necessary knowledge which the mind has of itself and of its states and activities.

This effect upon the mind is called sensation; and sensation is described as a state of mind, or a state of consciousness, produced by an impression made upon some sensory or afferent nerve.

Each of the sensory nerves produces a sensation peculiar to itself, and these sensations vary in quality and intensity. We have consequently sensations of touch, taste, smell, sight, and hearing. A sensation of sight may be soft and agreeable, or it may be dazzling and blinding; a sensation of sound may be low and musical, or it may be loud and shrill. Tastes and smells have almost innumerable variations in character and intensity.

Perception and Percepts. — Sensations are entirely subjective; that is, they are states of soul occasioned by external stimuli. At first, probably, the child lives for a little time a mental life of sensations only. He is in the world and touched by it, but does not at once understand or interpret the touch. The soul does not instantly respond to the approach of the outer world. Very soon, however, the mind, by an impulse apparently spontaneous, begins to look outward, and to attribute sensations to their causes. It responds to the touch of the material world; it becomes acquainted with things outside of itself; it localizes in space the causes of its sensations. This is perception, or, more strictly, sense-perception.

Definitions. — As an activity or process, perception is the mind knowing immediately things external to itself. As a psychical power, perception is the ability of the mind to know immediately things external to itself. The complete psychical product of an act of perceiving is called a percept. In other words, a percept may be described as the mental picture, image, idea, or notion which the mind has of a thing or object, while the thing or object is present to one or more of the senses.

Variety of Percepts. — Percepts are as various as sensations. We have percepts of sight, of hearing, and of all the other senses. The complete percepts of many objects are made up of the partial percepts, obtained through several of the senses, combined into one whole.

Ideas of Space and Time. — In connection with the perception of external things by the child, and with the discovery of the succession of sensations in the mind and of changes in things outside of itself, the ideas of space and time appear in the soul. To understand the

origin of these ideas, one must see clearly the distinction between the *cause* and the *occasion* of an event or of an act. An illustration will help us to see this. A person steals a sum of money; the cause of the theft is the disposition of mind; the occasion of the theft is the opportunity presented for gratifying the disposition. The disposition causes the act when the occasion is afforded.

Intuition. — The occasion of the appearance of the idea of space is the perception of external material things which must occupy space. The occasion of the appearance of the idea of time is the discovery of the succession of sensations and of perceptions, and the discovery of changes among external objects, which must occupy time. The cause of the appearance of these ideas is the native disposition of the soul, or, as it is usually called, the "intuitive power" of the soul. This same power recognizes the truth of axioms and self-evident propositions.

Such ideas and truths are known as intuitive ideas, or intuitions of the mind. "Intuition" may be defined as the activity of the soul which gives us simple, necessary ideas, and simple, necessary, and self-evident truths.

Groups of Mental Activities. — While the mind is regarded as a unit, and not as a collection of comparatively distinct "faculties" bound together with considerable firmness, yet, as it exhibits a variety of modes of activity, it is a matter of convenience, for purposes of study, to arrange those forms of activity which have certain characteristics in common into groups or classes, and to give these groups specific names.

First Group. — Consciousness, sense-perception, and intuition have some common characteristics, and may consequently be grouped together under the name of

perceptive activities, consciousness being regarded as inner perception, sense-perception as external perception, and intuition as perception of simple ideas and truths. They all present the material of knowledge immediately and directly to the mind. There is nothing like a roundabout process in their action.

Office of these Activities. — These activities furnish us the beginnings and raw material of all our knowledge. The higher activities of the soul cannot manifest themselves until sensation and perception have supplied matter which memory, imagination, judgment, and the other activities can lay hold upon and use.

First Step in Mental Development. — The first step in the psychical development of the child and in the process of his education must consist in the acquisition of power to form, with a good degree of rapidity, distinct, vivid, and accurate percepts. For the formation of such percepts, sensations must be of considerable depth and intensity, and consciousness must be intensified into a state which may properly be called internal attention.

Other Activities. — Sensations, and the percepts which they occasion, must be grasped, examined, and compared; their resemblances and differences must be noticed; those which have marked differences must be separated, and those which have resemblances must be united. At this point and in this way, classification, in a crude and imperfect form, commences, and real knowledge has its beginnings in the soul.

Necessary Conditions of Thinking. — These psychical processes of examining, comparing, separating, and uniting the material of knowledge, constitute thinking. In order that anything may be an object of thought, it

must in some way be present to the mind. If the object is some material thing, within reach of one of the senses, a percept is immediately formed of it, and we say we are thinking of an object literally present. But many material objects of which we think are not within the grasp of our senses, and many objects of our thinking are not material, and do not in any way appeal to the senses. Even of the existence of such objects the mind gets no information through the organs of sense. Yet if they are to be thought of or about, they must, in effect, be present in consciousness. By our own experiences we know this. We think of things which we saw, or heard, or felt long ago. We think of the relations of things, of the influence of one thing upon another, of the actions of men, and of the probable motives which prompted to these acts, and of an almost infinite number of other things, material and immaterial. In all such cases there appears to be a picture, an image, an idea, or some sort of notion of the object of thought present to the mind.

Power to retain, etc. — We thus discover that the mind has power to retain, to reproduce, and to re-know what it has once learned. It recalls former percepts; it forms pictures, or images, of places and objects of which it hears or reads; unites pictures and ideas into new and sometimes strange combinations. It is able also to hold all these various mental products steadily in consciousness, and make them objects of continuous thinking.

Difficult to name satisfactorily. — It is difficult to make a selection entirely satisfactory from the various names given by different writers to this general activity of mind, and also to the several closely related forms of

psychical activity into which the complex whole is usually resolved. Clear and distinct ideas of things, however, are of more importance than their names, and the following will serve our purpose.

Representative Activity. — The ability of the mind to form pictures, images, ideas, or notions of things not present to the senses, is called the representation power, or the representative activity. For convenience and brevity, we may name this power imagination, employing the term in a broad sense to denote the image-making activity of the soul. Imagination proper is used with a much more restricted meaning.

Real Representation. — When the representative activity forms pictures or notions of things just as they are, or just as we suppose them to be, it is named real representation. This mode of psychical activity is also called simple conception. The mental product of real representation, or simple conception, is named a simple concept, the limiting word "simple" being used to distinguish concepts of this kind from general concepts, or ideas of classes of objects. The representative activity as a whole is often called conception, or the conceptive power of the mind, and all its mental products are designated, in a general way, as concepts.

Recalled percepts are considered and named concepts, as they are obviously products of the representative power.

Imagination Proper. — We are conscious of another and very different kind of representation. Mental images, pictures, and ideas are grouped together and combined into new forms unlike any actually existing things. Such forms are called ideal representations. A painter produces an ideal landscape by combining in a single

picture representations of objects selected from many different and widely separated localities, — a mountain from one place, a valley from another, a grove from another, and so on, until he has filled his canvas. The story writer fills his work with incidents, skilfully and beautifully woven together, which originally had no relation to each other, thus furnishing an ideal story.

When the representative activity forms ideal products, it is called ideal representation, or imagination proper.

The imagination produces ideal results also by representing things as larger or smaller than they really are, thus making giants and pygmies out of ordinary men. By its magic power it transforms one thing into another, and represents persons and other living things by inanimate objects to which they have no resemblance. The boy's stick becomes a horse; the girl's toy-table is surrounded by a company of her playmates, with whom she holds long and animated conversations.

In the School. — In the schoolroom, by the help of imagination, the pupil sees rivers, lakes, hills, mountains, cities, villages, railroads, and a multitude of other objects on the map before him, where, in fact, he sees only lines and marks of various kinds.

Various Names. — Since the imagination manifests its wonderful power in many different directions, it has received various distinguishing names, designed to indicate the particular direction in which any special manifestation is made. For example, when it manifests itself in poetry and painting, and in other works designed to give pleasure and to excite the emotion of beauty, it is called the æsthetic imagination. When it brings vividly before the mind the past scenes and events, it is only memory, and is named the reproductive imag-

ination. When it arranges facts and other material gathered by scientific investigation into the form of hypotheses, thus aiding in the development of science, it is named the constructive and scientific imagination.

Memory. — Representation, both real and ideal, in many cases requires the aid of memory. Memory, as a power, is the ability of the mind to retain, reproduce, and recognize its previous acquisitions. Complete reproduction necessarily involves representation; that is, the formation of definite psychical pictures, images, or notions of the objects recalled.

Laws of Association. — Experience shows us that the knowledge which the mind has acquired is bound together in some way, so that any one thing previously known being brought back into consciousness, other things immediately follow, as if one were fastened to another by some invisible chain. Careful examination reveals the fact that in all cases a relation of some sort exists between things thus bound together. These relations, since they act constantly and uniformly, receive the name of laws of association, or suggestion.

The most important of these laws are: (1) the law of similarity; (2) the law of contrast; and (3) the law of contiguity. That is: things and thoughts are associated because they have certain resemblances, or because they are the direct opposites, or because they belong in the same time or in the same place, or are in some other way closely related. The general law of contiguity embraces a large number of special relations. Among these are the relations of time, place, cause and effect, subject and attribute, signs and things signified.

Forms of these Laws. — For convenience these laws may be reduced to the following brief forms: (1) Law of

similarity, — similar things and thoughts are mutually suggestive. (2) Law of contrast, — contrasted things and thoughts are mutually suggestive. (3) Law of contiguity, — things and thoughts co-existent or immediately successive are mutually suggestive.

Fundamental Laws. — Certain fundamental laws of psychical action evidently underlie all these special laws. Among such fundamental laws are the following: (1) The mind has a natural inclination or tendency to repeat any mode of activity once exercised, the tendency increasing with the number and frequency of the repetitions. (2) The presence of any part of a complex thing or thought, previously known, tends to suggest and revive the whole.

Conditions of Mind. — Certain conditions of the mind and body, and some other circumstances which have much to do with the efficient activity of memory, are sometimes called secondary and subjective laws of association and suggestion. The most important of these are: (1) attention, (2) repetition, (3) lapse of time, (4) associated feeling, (5) state of mind and body, (6) individual peculiarities, and (7) employments and habits.

Second Group of Activities. — The mental activities of real representation, or simple conception, of ideal representation, or imagination proper, and of memory, on account of the natural relationship existing between them, are conveniently grouped together and designated as representative, or conceptive, and reproductive activities.

Thinking. — The raw material of knowledge, furnished by the perceptive activities, and represented and held in consciousness by the reproductive and conceptive activ-

ities, must be examined, analyzed, sorted out, compared, and classified. By these processes the crude matter, received through the senses, is reduced to the condition of real knowledge. These various processes constitute thinking in the true sense of the word. For purposes of study these processes may be separated into three successive steps.

General Concepts. — In order to unite objects, or materials of any sort, into classes, or properly related groups, it is necessary to have bases of classification. A basis is simply a standard or model with which individual objects are compared. Such a basis is formed by combining into a single complex notion certain characteristics or qualities which are common to a large number of individuals; such a notion is called a general concept, and may be defined as the mental notion we have of a class.

First Step. — The first step in thinking is concerned with the formation of general concepts. This step embraces three subordinate processes; the first is called analysis, the second abstraction, and the third generalization.

Analysis. — Analysis, in this case, consists in the careful examination of a considerable number of similar objects and the separation of these into the distinct parts or elements of which they are composed.

Abstraction. — Abstraction, as the term is here employed, consists in selecting the parts or elements common to all these objects and combining them into one complex notion, called, as already stated, a general concept. To this concept some convenient and appropriate name is applied, this name being always a common noun.

Generalization. — Generalization consists essentially in grouping under this common name all the objects which possess these common parts, characteristics, or qualities.

Conception. — The mental activities exercised in these processes of analysis, abstraction, and generalization, considered as one complex whole, receive the name of general conception, or the conceptive activity.

Abstract ideas or notions are general concepts which embrace only a single element, characteristic, or quality. The ideas expressed by such words as hardness, brittleness, honesty, integrity, purity, impurity, goodness, and, indeed, by all abstract nouns, are of this sort.

The formation of a general concept may be illustrated in a familiar way by supposing a considerable number of balls of various sizes, of many different colors, of varying degrees of elasticity and hardness, and made of a variety of materials, to be given to a child. With no clear and distinct consciousness of the processes, the child proceeds to analyze these balls, and to discover their various qualities and characteristics. He notes the colors, sizes, degrees of hardness, and materials. In the end he perceives that the only characteristic common to all the balls is that of form. They are all round. Henceforth his notion of a ball will be that of a round object; this notion is a general concept, and this concept becomes the basis of classification for all similar objects. The general notion of a triangle, or of a quadrilateral, or of a parallelogram may be formed in a similar manner.

Second Step in Thinking: The Judgment. — The second stage in the thinking process consists in the examination and comparison of objects and ideas as to resemblances, differences, and relations, and in determining

whether or not they can be united. The mental activity which makes such examinations, comparisons, and decisions is called the judgment. This is one of the fundamental operations of the mind, and appears to be involved in almost every form of psychical action.

A Judgment. — The mental product of the act of judging is called a judgment. A judgment expressed in words is a proposition. Every proposition consists of a subject, that of which something is said, and a predicate, that which is said of the subject. Judgments are called affirmative when they assert something, negative when they deny something.

Third Step in Thinking. — The third and final stage of the thinking process is called reasoning. So far as *form* is concerned, reasoning consists essentially in the examination and comparison of two or more judgments, usually termed premises, and in the formation of another judgment, based upon or deduced from the premises, designated as the conclusion. For illustration, all bad men are harmful to the community; this person is a bad man; consequently this person must be harmful to the community. When the processes are given fully, as in this example, the reasoning is said to be explicit. When some parts of the process are omitted in the statements, being assumed to be understood and admitted, the reasoning is called implicit. For example, "The crop of wheat being short, the price of wheat will probably be high." The understood and suppressed premise here is, "Whenever the crop of wheat is short, the price is usually high." Most of our reasoning in every-day affairs is of this implicit sort. If our conclusions are denied or doubted, we proceed to make our reasoning explicit.

Induction. — Of the many varieties of reasoning described in works upon logic, only two or three, which illustrate clearly the natural and spontaneous modes in which the mind acts, can be considered. When one has examined a large number of objects of some particular kind, and has discovered that all these objects have a certain peculiarity or characteristic, he cannot resist the conviction that all objects of this kind, wherever found, will probably possess the same peculiarities or characteristics. This will be true even though no reason can be discovered why this peculiarity should exist.

For example, if, after a careful examination of blossoms from a great number of apple trees of many different varieties and from widely separated localities, it is found that every perfect blossom has five petals, the mind is unable to avoid the conclusion that all perfect apple-blossoms will have the same number, although it fails to discover any reason why the number should be five. In some cases apparent reasons can be given for the existence of common generic peculiarities, but it is doubtful if this strengthens, to any appreciable extent, the conviction in the mind of the universality of the peculiarity.

Natural Tendency of the Mind. — Evidently the mind has a natural tendency to conclude that whatever is true of a considerable number of things will also be true of all things which agree with these in certain important general characteristics. This complex activity of mind in examining successively several individual objects, and inferring a general truth or law from facts observed in such examination, is called induction. As usually defined, induction is the process of reaching general probable truths, laws, and rules from the examination of a

sufficient number of individual cases. This is the method of original investigation and discovery in the field of science, and is the psychical basis of the familiar pedagogical maxim, "Proceed from individuals to classes, and from particulars to generals."

Deduction. — After reaching and formulating general truths, laws, and rules, the mind has a natural tendency to apply these to individual objects and cases. This is the reverse of induction, and is named deduction, which may be defined as the process of applying general truths, laws, and rules to individual objects and to particular cases. The validity of the conclusion in respect to the individual rests upon the conviction that whatever is true of a class must be true of every individual belonging to the class.

Induction Confirmed by Deduction. — In many cases induction is the only process which can be employed in reaching a conclusion; generally if a good degree of care has been exercised in securing the result, the mind is satisfied and is not troubled by a feeling of doubt and discomfort. Yet in relation to not a few subjects such conclusions can be accepted as only probable truths, and the mind naturally refuses to rest until they have been strengthened and verified by the deductive process. This is especially observable in the department of mathematics, where probabilities find little place and rigid demonstration is so much in demand. I am indebted to a mathematical friend for the following illustrative example: —

Examining successively the numbers 126, 333, 639, 1107, 20736, and 50400, we find each of them divisible by 9, and also the sum of the values of the digits of each divisible by 9. Hence we come to believe that *very likely*

a number is divisible by 9 if the sum of the values of its digits is. This is pure induction; it has led to a possible discovery, but it is not proof.

Deduction is now employed to prove the proposition, the following being the method: a number on a scale of r may be represented by $a + br + cr^2 + dr^3 + \ldots$ But the remainder arising from dividing this by $r - 1$ may be found by putting 1 in the place of r; if this is done, the remainder is seen to be $a + b + c + d + \ldots$; that is, the sum of the digit values. Hence a number is divisible by $r - 1$ if the sum of the digit values is so divisible: but $r - 1$ on a scale of 10 is 9; hence the proposition is proved. For further details and illustrations of induction and deduction, and of reasoning generally, reference is made to any elementary work on logic.

Third Group of Activities. — The psychical activities of conception, judgment, and reasoning, on account of the close relationship between them, are grouped into a class and named, as previously stated, the thinking or elaborative activities.

Definitions and Summary. — For convenience of reference some of the most important definitions are brought together, and an outline summary of the knowing activities, or intellectual powers of the mind, is added.

1. The mind or soul is that in man which knows, feels, and wills. Psychology is the science which treats of the manifestations or activities of mind, and of the conditions under which these take place, and by which they appear to be modified.

2. Consciousness is the mind knowing itself and its own states and activities; or the necessary knowledge which the mind has of its own states and activities, and of itself as the being that has these states and exercises these activities.

3. Sensation is a state of mind caused by an impression made upon some sensory nerve. It may also be defined as a state of consciousness.

4. Perception, (1) as a power, is the ability of the mind to know directly and immediately the external world, or things outside of itself; (2) as a process, perception is the mind knowing directly and immediately the external world, or things outside of itself.

5. A percept is the complete mental product of an act of perceiving.

6. Intuition is the psychical activity by which we know immediately many simple, elementary ideas and self-evident truths.

7. Representation is the activity of the mind which forms mental pictures, images, ideas, or notions of things not present to the senses. (This activity is also called imagination, and sometimes conception.)

8. Real representation is the psychical activity which forms pictures, images, ideas, or notions of things exactly as they are, or are believed to be. (This activity is also called simple conception.)

9. Ideal representation, or imagination proper, is the mental activity which forms ideal psychical pictures, images, ideas, or notions.

The mental products of all forms of the representative activity are called, in a general way, concepts.

10. Memory is the activity of mind which retains, recalls, and recognizes its previous acquisitions. (Every perfect act of the memory involves real representation.)

11. Laws of association are the relations existing between things or thoughts which cause them to be mutually suggestive.

12. Conception proper is the complex activity of

mind which forms general notions or concepts. It includes (1) analysis, (2) abstraction, and (3) generalization.

13. A general concept is the mental idea or notion of a class.

14. The judgment is the psychical activity which examines, compares, discriminates, and decides as to the likenesses and differences of things, and affirms or denies that they can be united.

15. A judgment is the mental product of an act of judging.

16. A proposition is a judgment expressed in words, and consists of two notions, either simple or complex, called the subject and the predicate.

17. Reasoning is the complex mental process by which related judgments are compared and new judgments are formed by inference or deduction. (No single, brief definition can be given of this process which is satisfactory. It must be made clear by illustrations. The term reason is used with so many various meanings that no attempt is made to define it.)

18. Induction is the process of reaching general probable truths, laws, and rules from the examination of a sufficient number of individual cases. (It might be defined as the process by which the mind passes from individuals to classes and from the particular to the general.)

19. Deduction is the process of applying general truths, laws, and rules to individual cases. (It might be defined as the process by which the mind passes from classes to individuals and from generals to particulars.)

Outline synopsis of the Knowing Activities.— The Intellect.

I. The Perceptive Activities.
1. Consciousness or inner perception.
2. Sense-Perception or outer perception.
3. Intuition or perception of simple ideas and axiomatic truths.

II. The Representative and Reproductive Activities.
1. Real Representation or simple conception.
2. Ideal Representation or Imagination.
3. Memory (involving real representation).

III. The Thinking or Elaborative Activities.
1. Conception proper.
2. The Judgment.
3. Reasoning.

GENERAL REFERENCES.

Putnam's Elementary Psychology, chapters i. to viii. inclusive.

Sully's Outlines of Psychology, chapters i. to x. inclusive.

James' Psychology, briefer course, chapters i. to ix. inclusive.

Hill's Elements of Psychology, Part I.

Lindner's Empirical Psychology, Introduction and Part I.

Polaud's Laws of Thought.

Davis' Elements of Psychology, Introduction, chapters i, ii., iii.; Part I., chapter ii.; Part II., chapter vi.

CHAPTER V.

OUTLINE STUDY OF MIND (*continued*).

The Feelings. — The Will. — The Moral Powers.

Feelings.— Associated with the various mental activities of knowing, we are conscious of states of mind designated, in the absence of a better name, by the general term "feelings." In strictness of speech, these states of mind are indefinable, but necessity compels the use of statements which take the form of definitions, and are so named.

Importance.— An acquaintance with the feelings is of the highest importance, because the active and impelling forces of the soul are found in them. Men do not act merely because they know. All voluntary activity, either of soul or body, is preceded by the psychical act of willing. And every act of willing is preceded by the impulsive force of feeling. The order is, knowing, feeling, willing, action. Motives, so-called, which determine to a large extent both conduct and character, are found in the domain of the feelings.

Thinking and Feeling.— Thinking and feeling are mutually helpful when they are both concerned about the same object, and are moving in the same direction, and are neither of them in excess. This is not always the case. One's feelings may be occupied by some object or subject while he is thinking, or trying to

think, of something else. The mind is in a state of conflict and confusion. The current of thought and the current of feeling are flowing in opposite directions. Under such conditions no effective work can be done. The problem is how to bring the two activities into harmony.

Conflict. — It may happen that one of the currents is so strong, so intense and overwhelming in its character, that it sweeps on with resistless force, destroys the other current and draws into itself and absorbs the whole power and activity of the soul.

Profound thinking may thus overcome and exclude all feeling; or very intense feeling, such as excessive joy, or excessive sorrow, or great terror, may exclude all possibility of connected thinking.

Most Productive State. — The state of most productive mental activity is that in which thought and feeling are naturally and properly related; both are present, both are active, but neither is in excess.

Classification of Feeling. — The feelings are so numerous, so various, and so intermingled that it is extremely difficult to classify them in any manner entirely satisfactory.

The consequence is that each writer classifies in accordance with some theory of his own, or according to the immediate object which he has in view. The purpose in view determines the classification here adopted.

Bodily Feelings. — States of body and states of mind are so closely related, and so act and react upon each other, that we begin with the physical feelings. Of these there are (1) the vital and organic feelings. The activities of the vital organism in the processes neces-

sary for the support of life are attended by states of body properly called feelings. The same is true of the activities of all parts of the physical organism. These feelings are either agreeable or disagreeable, pleasurable or painful, and are very numerous. Next of the bodily feelings (2) are the appetites, divided into (*a*) natural and (*b*) acquired. Natural appetites are regularly recurring feelings caused by some want in the organism. They might be called cravings or desires of the body. Acquired or artificial appetites are cravings, or feelings of discomfort and irritation, created by habits. The appetites are so intimately related to the psychical feelings of desire that they must be reckoned among the impulsive powers which excite and give direction to human activity.

Mental Feelings: Emotions. — Of the mental feelings, the first class is that of the emotions.

Of these, (1) the lowest division consists of the simple emotions. These are, in many cases, closely associated with bodily states, and are caused by such states. Simple emotions are merely moderately excited states of mind, usually either pleasurable or painful, but frequently having little positive character. They find natural modes of manifestation in the countenance and in movements of the limbs and other parts of the body.

A second (2) division of the emotions, called the higher emotions, includes the peculiar and usually pleasurable states of mind produced by exhibitions of wit, humor, and of the ludicrous, and also by objects of beauty and sublimity. The beautiful and sublime in language, in poetry, in music, and in conduct, excite similar states of mind. These feelings are highly intel-

lectual in character, and they also touch the purest and noblest qualities of the soul. Under the influence of the emotions of beauty and sublimity, the depths, rather than the surface of the soul, are moved.

Nature of Emotions. — In case of pure emotions, whether simple or higher, the excited feelings seem to rise and die away in the mind without flowing over, or going out, either for good or evil, towards other persons or objects. We are conscious of other feelings which do seem to flow out towards others, sometimes with a strong and violent current, with evident purposes of love or hate, of good-will or ill-will, of kindness or unkindness.

Second Class: Affections. — Feelings which appear to flow out of the soul towards others, either for good or evil, are usually called affections. This term, being commonly employed to designate feelings of love and kindness only, is an unfortunate one, but none essentially better has ever been suggested. The affections are conveniently grouped into three sub-divisions: —

Beneficent Affections. — *First*, (1) *the Beneficent*, embracing feelings of kindness and good-will towards others which prompt to acts of kindness, charity, and mercy. The beneficent may be divided into (*a*) the Domestic, (*b*) the Social, and (*c*) the Philanthropic.

The domestic include the affections which belong to the home and to kindred; the social include the kindly feelings which naturally spring up between friends, neighbors, associates, and countrymen; the philanthropic include the feelings of love, kindness, mercy, and all the good feelings which we entertain for members of the human family, whoever they may be or wherever they may be found. These feelings manifest themselves also toward domestic animals.

Second, (2) *the Defensive*, embracing those feelings which prompt to the defence of one's self and of others when unjustly attacked and seriously threatened with violence and harm. (*a*) Resentment prompts to the defence of self, and (*b*) indignation to the defence of others. This distinction in the use of these terms is not always observed.

Third, (3) *the Malevolent*, which include all the feelings that incite to the injury of others. Among such affections are envy, jealousy, anger, hatred, malice, and revenge.

Third Class: Desires. — In addition to the emotions and affections, we are conscious of a feeling of another kind, which may be called the appetite of the soul. It is a craving of the mind for those things which we believe will contribute in some way to our pleasure, enjoyment, advantage. This feeling is commonly named desire. Its supreme importance arises from the fact that it is the great central motive power, or impulsive force, in the human soul. It appears to precede every act of volition. To produce voluntary action, on the part of either child or man, it is necessary to excite this feeling. The whole study of motives consists essentially in finding and employing the best and highest available means of arousing the feeling of desire and of giving it right direction.

Objects, either of sense or of thought, are properly motives only as they appeal to this inward susceptibility, and set in motion this mighty impelling force.

Various Names. — While desire appears to be a single feeling, having the same characteristics in all its forms of manifestation, it receives various names derived from the objects upon which it seeks to lay hold. Hence

we have a great multitude of desires. Among these are the desire for approbation, for esteem, for society, for knowledge, for acquisition, for superiority, for power, for excellence, for activity, and for right-doing. As already suggested, all desire has in view pleasure, enjoyment, satisfaction, well-being of some sort, and ultimately that state which may be called happiness. Desire may have in view the pleasure, enjoyment, and good of others as well as one's own.

Complex Feelings. — Many feelings are too complex in their nature to be assigned exclusively to any one of these great classes. They embrace elements of emotion, affection, and desire in varying degrees. Among these are some of the most powerful of the feelings which spring up in the soul, such as hope, despair, fear, alarm, dread, terror, and horror. Self-conceit, pride, vanity, haughtiness, and other kindred feelings, and the opposites of these, are largely emotional in their nature, but they evidently possess elements which are more powerful than mere emotions.

As to Origin. — In respect to origin, feelings are (1) instinctive, (2) rational, and (3) mixed. Instinctive feelings are those which spring up spontaneously in the soul under certain conditions and circumstances without thought, reflection, or consideration. The feeling or impulse which prompts the hen to protect her chickens, and the cat to defend her kittens, and the human mother to care for her young child, is of this kind. The impulse to preserve one's life, to shun danger, to seek to know things, to acquire property, to defend home and country, is of the same sort.

Since all instinctive feelings tend to produce action of some kind, the actions so produced are called instinctive.

Instinct may be defined as an impulse to activity directed to definite ends, before the actor has had either experience or instruction. Among the impulsive forces of the mind instinct is one of the most powerful.

Rational feelings are those which arise in the soul in consequence of knowledge, thought, reflection, or consideration. Knowledge that an object is valuable produces a desire for its possession. Reflection upon favors received begets the feeling of gratitude.

Mixed feelings are those which, instinctive in their beginnings, are modified and, to a considerable extent, controlled by rational consideration. This instinctive impulse to know is modified and strengthened by the consideration that knowledge will be of practical advantage in many ways. The natural impulse to gain property is made stronger by an experience of the pleasure, comfort, satisfaction to be derived from its use.

The Will. — Willing.

Experience. — Before the performance of any act which is called voluntary we are conscious of a series of mental acts terminating in a decision or determination to perform the act proposed. The psychical processes appear to follow one another in this order: Some alternative is presented to us; we are asked to take or refuse some object; to select one course of conduct instead of another; to go to one place rather than another.

Deliberation. — When an alternative is thus put before us we proceed to deliberate, that is, to examine and weigh the reasons for and against this or that line of conduct, for and against any proposition which we are requested to entertain. In this examination we employ

almost every form of mental activity from simple sense-perception to the most complicated processes of reasoning. At every step the judgment is especially and peculiarly active.

Choice. — The examination finally results in a conclusion that one object or one course of life is preferable to another, is more desirable. In consequence of this conclusion, which may be called choice, the feeling of desire is excited. Qualities and characteristics have been discovered which cause the mind to crave the object as a means of enjoyment or advantage.

Volition. — This feeling of desire, if sufficiently strong, is followed by the final act of the series called volition; that is, by a determination to have or not to have, to do or not to do. This whole series of mental processes, of which volition is the last and crowning one, is known as an act of the will, or as the complex act of willing. Consequently we say, the will is the mental activity or power of choosing and determining. It is the executive power of the soul, and as the executive power it is "the seat, or centre, of human responsibility." Since its choices and decisions give direction to the activities of both the soul and body, it determines conduct and character. Hence moral education consists largely in the education of the will.

The Moral Nature. — In concluding this outline study of the human being we have to consider briefly the moral nature so-called. The moral nature in man is that which renders him responsible for what he does and for what he is. Responsibility rests upon (1) knowledge and (2) freedom. In order that one may justly be held accountable for his conduct he must have the ability and the opportunity to know the right and the wrong, and

must also have freedom to choose between them. Man possesses both these requisites, and is, consequently, a moral and responsible being.

Simple Idea of Right: Moral Intuition. — It is necessary to know, (1) first, that there is a distinction between things, — a line, so to speak, separating acts, thoughts, feelings into two great divisions or kinds, one kind called right, the other wrong. This dividing line may be called the simple, elementary idea of right and wrong. This idea is universal. All men everywhere possess it with varying degrees of distinction and clearness. It is evidently the product of the intuitive power of the soul. Since this power is here exercised in the direction of right and wrong it may be named moral intuition, and we may say moral intuition is that activity of the soul which makes us acquainted with the simple primary idea of right and wrong. Intuition does not teach us what things are right and what things are wrong, but only that a necessary and fundamental distinction exists between them.

Moral Perception. — It is necessary (2) next, to know what acts, thoughts, and feelings are right and what are wrong, what things belong on one side of the dividing line and what on the other. In respect to the right and wrong of many things there is very little difference of opinion. Men everywhere pronounce murder, robbery, theft, lying, and all acts of like character, wrong; and they affirm with equal unanimity that it is right and praiseworthy to tell the truth, to be honest, upright, just, and merciful.

The moral qualities of these and similar acts and states seem to be discovered and recognized at once, just as the most obvious qualities of material objects are

instantly discovered by the senses. The ability of the mind to do this is called moral perception, and may be defined thus: Moral perception is the power of the mind to discern with little or no instruction or consideration, immediately and directly, the moral qualities of many human acts, and many states of soul.

Moral Judgment. — To determine the right or wrong of many things, to settle many questions of obligation and duty, much inquiry, examination, study, and reflection are necessary. Almost all the activities of the mind are employed. For the sake of brevity, this whole complex mental process may be called an act of the judgment, and the following definition may be accepted: Moral judgment is the psychical activity which examines and decides all questions of right and wrong which are too complicated to be determined by simple moral perception. In all cases the judgment decides according to some recognized standard. This standard is the moral law; and moral law may be defined as a rule, or a code of rules, for the guidance of human conduct.

Conscience. — Whenever the judgment has rendered a decision as to moral right or wrong, we are conscious of a strong impulse of soul which insists that this decision shall be respected and obeyed. If the judgment affirms that a particular course of life is the right one for us to pursue, this inward force impels us to adopt and follow that course, and reproaches, disquiets, and torments us, more or less vigorously, when we refuse to do so. This impulsive power is conscience, and it may be defined as that activity of the soul which insists that the decisions of the moral judgment shall always be obeyed, that we shall, in all cases, do what we believe to be right, and abstain from doing what we believe to be wrong.

Only peculiar Moral Activity. — Conscience is the only activity of the soul peculiar to the moral nature. It manifests itself only when questions concerning right and wrong are under consideration, and when matters of obligation and duty are to be determined. Intuition, perception, and judgment receive the name "moral" merely to indicate that they are exercised upon matters involving problems of right and duty.

Moral Feelings. — All feelings, but especially the affections and desires, are among the forces which give direction and character to human conduct. They involve responsibility and, consequently, belong to the moral nature.

Peculiar Feelings. — Certain feelings are inseparably connected with the action of the moral judgment and of conscience. Feelings of satisfaction, of self-approval, of calmness and rest of soul follow ready and cheerful obedience to conscience; feelings of dissatisfaction, of self-condemnation, of unrest of spirit, and, in extreme cases, of remorse follow disobedience to conscience.

Outline Synopsis of the Feelings and the Moral Nature.

THE FEELINGS.

- I. As to Origin.
  - 1. Instinctive.
  - 2. Rational.
  - 3. Mixed.
- II. As to Nature.
  - 1. Physical.
    - 1. Vital and Organic.
    - 2. Appetites.
      - 1. Natural.
      - 2. Acquired.
  - 2. Psychical.
    - 1. Emotions.
      - 1. Simple.
      - 2. Higher.
    - 2. Affections.
      - 1. Beneficent.
      - 2. Defensive.
      - 3. Malevolent.
    - 3. Desires.
    - 4. Complex feelings.

THE MORAL NATURE.

- 1. Activities or Powers.
  - 1. Intuition.
  - 2. Perception.
  - 3. Judgment.
- 2. Feelings or Impulsive Forces.
  - 1. Feelings generally.
  - 2. Conscience.
  - 3. Will.

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CHAPTER VI.

LAWS OF DEVELOPMENT AND INFERENCES FROM THEM.

An Illustration. — The future tree exists in germ and possibility in the seed enclosed in the hard pit of the peach. The future bird exists in embryo in the egg of the robin. Whether the tree or the bird shall exist in reality and in full perfection depends upon conditions and circumstances, upon environment. But if they are developed, the tree will be a peach and the bird will be a robin. *What* each shall be is predetermined by the nature of the germ. Of *what sort* it shall be — that is, whether it shall be good or bad of its kind — will be determined very largely by its surroundings.

Laws of Development. — Certain conditions in respect to temperature, to means of sustenance, to protection, to general care and attention, are necessary to the complete development of tree or bird. These conditions constitute laws of development for both vegetable and animal life. The best result can be secured only by observing these conditions.

The Man in the Child. — The man exists in germ and possibility in the child. No power will appear in the fully matured human being which did not have its beginnings in the unconscious and helpless infant. What the child shall be if allowed an opportunity to develop, is predetermined by the nature of the embryo.

But of what sort he shall be depends very largely upon the conditions, the circumstances, the influences which constitute his environment in the early and most plastic period of life.

An Important Element: Will. — One important element appears in the unfolding child which does not appear at all in the plant, and only to a very limited extent in the animal. This is the power of self-determination or will. By this power the child begins, at a very early stage of growth, to resist some influences of its surroundings and to yield itself to the direction of other influences, and to modify, by its voluntary activity, the conditions in which it has been placed.

Earliest Exhibition of this Power. — The earliest exhibition of this power of self-determination appears in the form of resistance to external physical force exerted by the mother in changing the position of the child and in turning it in one way and another. Vexation at inability to make effectual resistance is manifested by violent jerkings of the limbs, contortions, and cries. A little later, when the child has learned the meanings of signs and spoken words, it puts itself in opposition to the requirements of authority expressed without the use of physical force. It refuses to do what is commanded, or to refrain from doing what is forbidden. Its law of conduct is evidently its own impulses and desires. Presently having discovered that conduct has consequences and that the yielding to certain impulses is followed by discomfort, the child begins to resist some of its own impulses and desires and to inhibit the conduct which they prompt. Self-determination turns itself in the direction of self-control by resisting internal and, in some cases, instinctive impulses.

Positive Action of Will. — While the earliest manifestations of the self-determining power are in the direction of resistance to movement, voluntary effort is soon made to produce movement. The child reaches for objects, moves towards them, seeks to grasp them and to use them for its own gratification. Imitation soon begins, which indicates the formation of pretty distinct ideas of movements and something of deliberation and choice.

It is not the purpose here to trace in detail the development of the will, or the power of self-determination, but simply to show how important a factor the will is in the education of a human being, and at how early a period its manifestations appear. At first the will, like all the psychical activities, is extremely weak, and the conduct of the child is irregular, fitful, and inconsistent. Gradually, if the management of the parent and teacher is wise and uniform, the child becomes able to weigh motives, to select the better in place of the worse, to put aside present gratification for future and even distant advantage, to pursue a regular and uniform course of life, and to resist strong enticements and allurements by turning voluntarily and resolutely away from them and fixing the attention upon other objects and in a different direction. The wisdom and skill of both parent and teacher may be estimated by the measure of their success in the right development and training of this self-determining power, the most characteristic and most important element in the child's nature.

Preyer. — "The human will is the greatest power on earth. It is man's will that shapes his destiny. His career in life is determined chiefly, not by accidental circumstances, by environment or by education, but by his own will. 'Man makes

his own destiny,' and, 'every man is the founder of his own fortune,' only through his own will. On the forming of the will depends well-nigh everything in education."

Inherited Tendencies. — It is expected that the child will resemble the father or the mother or some other ancestor in his physical organism. In stature he will be short or tall, in complexion light or dark, in general make-up stout or slender, in harmony with the usual family characteristics. Analogy would lead one to anticipate something of the same sort in the psychical nature. In addition to the mental characteristics common to human nature, among which is the self-determining power previously spoken of, any individual child may inherit certain peculiar tendencies or traits of mind from his immediate parents or from more remote ancestors. Such tendencies in the child, in many respects, bear a marked resemblance in their modes of manifestation to instinct in the animal, giving some color to the theory that instinct is only inherited memory. Intellectual traits of the father or the mother exhibit themselves at certain stages of the child's development, — a peculiar readiness in the acquisition of languages, special facility in mastering mathematical studies, a marked aptitude for scientific investigation. Moral characteristics also seem to be transmitted, — tendencies to various forms of criminal conduct and vicious practices, such as lying, stealing, and other forms of dishonesty, intemperance, social impurity, and other vices. It should, however, be borne in mind that, in most cases of this kind, environment comes in to strengthen and intensify the inherited tendency.

While there is without doubt considerable power in

what is called heredity, yet it is quite possible to overestimate its importance, and to fall into a species of "scientific fatalism." The natural tendency in all vegetable and animal organisms, however highly specialized, is to revert to the original stock and original characteristics. This is doubtless true of the human race. Special family peculiarities tend to disappear; common characteristics persist; if the special has become too strong for the general, vitality becomes gradually exhausted and the family or the variety dies out. The teacher, in his work, will recognize heredity, but will not consider it an insuperable obstacle in the way of the proper education of a child.

Power of Environment. — Making due allowance for the self-determining power in all children, and for peculiar cases in which this force is especially strong, and for the influence of heredity, it still remains true that the environment determines, to a very large extent, the direction in which development shall take place.

What the Environment is. — The environment, at first, consists of the family into which the child is born; a little later, of the immediate neighborhood in which the years of childhood are passed; later still, of the wider world into which he gradually enters. Finally the environment becomes all material things and the forces associated with them; all the products of human activity embodied in the conveniences of life, in arts, sciences, literature, history, and in institutions. Among institutions are schools and all the appliances of education.

Education a Result. — The education of the child is mostly the result of the action and reaction of the soul and its surroundings. The soul has susceptibilities; these are impressed and excited by the objects and

influences about it. The soul, also, has positive activities; these lay hold upon external things and appropriate them to its own use and service. At the same time the mind itself is changed and modified by the efforts which it puts forth and by the material which it appropriates and absorbs. In this way the germs of power and activity in the soul are unfolded and matured; development is secured; training takes place, and knowledge is acquired.

Work of Schools and Teachers. — Much of this reciprocal action between the soul and its environment goes on without direction and unconsciously on the part of the child. All sorts of material and all kinds of influences push themselves forward into contact with his sensitive and impressible mind, often to the great detriment of the better and higher elements of his nature.

A large part of the legitimate work of the school and the teacher is to select and bring before the child such materials, such objects and influences, as are best adapted to give right direction and wholesome activity to his developing powers during the successive periods of his progress to full maturity.

What Laws of Development are. — As previously stated the germs of all mental activities exist in the unconscious infant. Most of these activities begin to manifest themselves, in some degree, even in very early childhood. But experience and observation show that they unfold, increase in power, and attain maturity in regular order, under unvarying conditions, and by the use of appropriate means.

Formal statements of this order, of these conditions, and of these means, are called, for convenience, laws of development. These laws may be reduced to three:

(1) the law of order of development; (2) the law of condition of development; and (3) the law of means of development.

The discussion of these laws and of the natural inferences or deductions from them make up the first part of the application of psychology to educational affairs and to the art of teaching. Methods of teaching are considered in a later chapter.

Laws of Development.

First Law: Order of Development. — The powers and activities of the child are developed in a regular order. This law applies equally to the body and the mind.

Order in the Body. (1) The digestive and related systems. — At the beginning of life the digestive and related systems exhibit considerable vigor and activity, more than any other parts of the physical organism. The immediate action of these organs is necessary to the support of life. For some time the young child does little else than eat, sleep, and assimilate the nourishment which it takes by an act purely instinctive.

(2) **The nervous, muscular, and related systems.** — The action of these systems is necessary to the adjustment of one's self to one's environment and to self-direction and self-support. The nervous system begins to exhibit its activities at a very early period. This is necessary since it is the organism through which the mind must manifest itself. The development of some parts of this system is much more rapid than that of the body generally.

The brain, the great centre of the nervous organism, attains nearly its full size at about the eighth year of

the child's life. The weight of the brain, compared with the weight of the whole body, is about as one to thirty-six or forty at the period of maturity, while at the age of four it is as much as one to sixteen.

Development of Sensory Nerves. — The nerves of special sense begin to exhibit their peculiar activity in a remarkable degree while the body as a whole is still almost helpless. The lower senses of taste, smell, and touch manifest a good degree of activity within a few days after birth. The higher senses of hearing and sight attain the power to act with regularity and precision at a little later time, but yet at a very early period.

Importance of this early Development. — This early activity of the organs through which the mind and the external world come into contact is of the very highest importance to the education of the child. While the body, so far as the bones and muscles are concerned, is still too immature and weak to bear burdens or to perform service of any kind, the work of education can begin and can be carried on with considerable rapidity and regularity. The condition of the brain indicates that no real tasks or severe mental labor should be imposed before the age of seven or eight years. But the instruction and exercises of the kindergarten and of the properly conducted primary school afford physical and mental training adapted to two or three of the earlier years. Consequently the development and training of the mind may anticipate, to some extent, that of the body, and the period of early childhood may be made the most fruitful time of the whole life.

Order of Intellectual Development. — Nearly all forms of mental activity manifest themselves, to some extent,

even in very early childhood. But the manifestations of some forms are very feeble, and, from the nature of psychical action, some forms must precede others.

Earliest Activities: The Perceptive. — Conscious mental life evidently begins with sensation; consciousness makes us aware of sensation; sensation leads to perception of the external, material world. Knowledge of material objects occasions the idea of space; and the discovery of changes within and around us occasions the idea of duration and time. The intuitive activity manifests itself in connection with consciousness and sense-perception.

During the first years of a child's life sense-perception and its necessary accompanying activities absorb and occupy much the larger part of his available mental energy. Other activities are secondary and subordinate.

Second Class of Activities: The Representative. — Gradually the predominant form of psychical activity changes. Material of knowledge has been gathered by the perceptive activities, but has been only partially and crudely assimilated or apperceived. The assimilating processes require the activities of memory of real representation or conception and of ideal representation or imagination to hold distinctly in consciousness the matter or concepts to be examined, analyzed, classified, and appropriated. These activities must necessarily follow those of perception, and they may consequently be regarded as second in order of development.

Third Class: The Thinking Activities. — The proper assimilation and absorption of the raw material of knowledge require the constant exercise of the processes of analysis, comparison, and discrimination. These processes involve the activities of general con-

ception, judgment, and reasoning. Consequently we observe the manifestation of these activities in the early stages of mental development. But such forms of psychical action, during the period of childhood, are comparatively feeble, and their products in the way of classified knowledge are of only moderate value. It is not until a later stage of development that the activities of judging and reasoning become predominant and give especial direction and character to the mental life. They may, therefore, be properly regarded as the third class, and the latest of the knowing activities in reaching the condition of maturity.

Order of Development of the Feelings. — Since some sort of feeling necessarily attends or immediately follows every exercise of a knowing activity, the development of the sensibilities must keep pace with that of the intellect. The steps of progress, however, cannot be so distinctly marked nor so readily traced. The feelings are so complex, so intermingled, so difficult in many cases to detect and analyze, that no clearly-defined lines of separation can be drawn to indicate the stages of development or the rate of advancement.

First, The Physical Feelings. — The vital and organic feelings and the natural appetites are the first of which the child is conscious. General feelings of comfort and discomfort, of pleasure and pain, of rest and unrest, pervade the whole organism. The cravings of hunger and thirst are felt; the pleasure which comes from the proper gratification of appetite and the pain and disgust which follow over-feeding are experienced. Touch, taste, and smell all contribute to the ill-defined feelings of bodily comfort and discomfort. A little later, when the child has acquired some mastery over himself so as

to be able to creep, to walk, to run, he experiences feelings of the same nature as those manifested in the frolicsome movements of many young animals. Evidently mere activity is a source of pleasure, and any kind of restraint produces discomfort and pain. A knowledge of these early physical feelings is of importance on account of the close relationship existing between them and the simple mental emotions. The latter often take their tone and character from the former, and the mental can be understood and correctly interpreted only by reference to the physical.

Second, The Simple Emotions. — It is probably impossible to determine satisfactorily how early the first emotions manifest themselves, or the order in which they appear. The expression of the face and other muscular movements, which, at a later period, are pretty sure indications of the nature of the emotions, may at first be only reflex and unconscious movements and expressions.

The Earliest, probably. — The almost animal character of the infant's life and the intimate connection between physical conditions and psychical states make it altogether likely that the earliest conscious emotions are those of mental comfort and discomfort, satisfaction and dissatisfaction, pain and pleasure, scarcely distinguishable from the corresponding bodily feelings. These grow rapidly more positive in character and exhibit themselves in muscular movements, expressions of countenance, and tones of voice, which cannot be misunderstood or misinterpreted. Consequently more positive and well-defined feelings of pain and pleasure, of joy and sorrow, soon follow. Mingled with these, feelings of wonder, astonishment, fear, aversion, antip-

athy, and so forth, appear. All these are, to a large extent, instinctive or inherited, manifesting themselves before experience can have taught any lessons which affect conduct.

Third, Feelings of Affection and Desire. — No sharp and well-defined line of separation can be drawn between these and the simple emotions. The feelings of young children are almost exclusively egoistic. Self is the centre of the child's world; everything is regarded and estimated by its relation to personal enjoyment and suffering.

The child, at first, loves and desires that which ministers to his own pleasure; he dislikes and has an aversion for everything which brings to him discomfort and pain, or which thwarts his inclinations or wishes.

Gradually, and at a pretty early period, if the education of the child is of the right character, the domestic affections and the desires which accompany them begin to manifest themselves. These are followed by the social affections, and considerably later by the philanthropic affections, which in many cases, appear only after intellectual development has made a good degree of progress.

Along with the beneficent affections, the defensive and the malevolent affections make themselves manifest. The development of the desires must, of necessity, be co-ordinate with the development of the intellectual activities.

Last, the Higher Emotions. — The higher emotions, such as the feelings excited by the beautiful and the sublime, manifest themselves latest in the natural order of evolution. Ordinarily these appear only after a considerable degree of intellectual culture has been received.

The young child simply wonders where the person of maturity appreciates and admires; the one is merely terrified where the other is filled with feelings of awe and sublimity.

Complementary Relation. — Feeling being the complement of thinking in the human soul, the character of the feelings, at any particular period, will be determined very largely by the content of the mind on the side of knowledge. Pure, good, true, and elevated thinking will naturally be attended by pure, good, true, and elevated feeling. Thinking of opposite character will be attended by feelings of opposite character. Consequently the rate and character of emotional development may be inferred, with a good degree of certainty, from a knowledge of the stage and character of the intellectual progress.

Order of Development in the Moral Nature and the Will.

Source of Responsibility. — The moral nature is that in man which renders him responsible for his conduct. The two things necessary to make a responsible being are intelligence and freedom, intelligence enough to understand clearly the distinction between right and wrong, and freedom to choose and pursue one of these in preference to the other.

The Problem. — The practical problem in moral development and training is to secure this intelligence, and to create in the mind a permanent inclination or disposition to choose and follow the right rather than the wrong. Such a disposition depends upon the proper

development and training of the will as the determining force in human character and conduct.

Activities and Forces. — The activities of the moral nature which insure proper intelligence are moral intuition, perception, and judgment. The forces in this nature which impel to right choice and to right conduct are the emotions, affections, and desires, the conscience and the will.

Only an Outline. — In what order are these activities and forces developed? In this place only a brief outline will be given, as the subject will receive some special consideration in another place.

First Step. — At first, and for some time, the young child exhibits no evidence of knowing or caring for such a distinction as that of right and wrong; gives no manifestation of conscience or will. His first rule of conduct is his own inclination. His first lesson looking towards moral development and training is that of obedience to the mother. This lesson reveals to him a law of conduct outside of himself, and the necessity of obeying this law out of regard for his own personal comfort. He discovers that some kinds of conduct are approved and other kinds are disapproved by the mother; that some actions contribute to his pleasure, and others bring pain. This is probably his first step in practical moral development.

Second Step. — In connection with the discovery that some things are approved and others are disapproved by the person whose will is now his law of behavior, intuition gives birth to the idea of a right and wrong. Gradually moral perception and judgment lead him to place certain things on the side of right, and other things on the side of wrong. The judgment will be

guided in its decisions, for some time, almost entirely by the instructions and conduct of parents and teachers. The conduct of others, or custom, becomes the child's law of behavior.

Conscience appears. In connection with the activity of the judgment in relation to the question of conduct, conscience begins to exert its impulsive force and to insist upon obedience to the decisions of the judgment. At first this insistence is not very strenuous, and disobedience does not bring serious discomfort or self-condemnation. If moral instruction and training are uniform and consistent, the power of conscience increases with a fair degree of rapidity.

The Feelings. — So far as they are incentives to conduct and help to give direction and character to conduct, all the feelings belong to the moral nature. Certain feelings which are peculiar to the moral nature, and can manifest themselves only in connection with questions of right or wrong behavior, appear successively as the occasion calls them forth. The simplest of these are the feelings of satisfaction and dissatisfaction, of self-approval and disapproval. As conscience becomes more positive in the exercise of its authority, these simple emotions are succeeded by the stronger feelings of regret and remorse and other related states of soul.

Development of the Will. — We may define the will as the power of self-determination, or as the power of mind to choose freely some desired end and to direct its energies to the attainment of that end. It is consequently the executive power of the soul.

The Infant. — The infant gives no evidence of the activity of will. Its early movements are automatic, impulsive, or reflex. For some time there is no mani-

festation of choice, or of action directed to a definite, desired end. Before action can be directed towards an end, there must be in the mind an idea or representation of the end, and also an impulse urging to the attainment of the end. The idea or representation is a matter of knowledge. The impulse is a feeling, desire. Knowing and feeling must consequently precede willing.

Will first manifested. — The earliest observable evidence of the exercise of will is seen in the child's efforts at imitation. The act to be imitated must be imaged or represented in the mind, and an impulse to perform the act must be felt, before imitation is attempted. It is quite probable that earlier exercises of will have taken place in the direction of resistance to movements of body compelled by the person in charge of the child, but of this we cannot affirm positively.

First Law of Conduct. — The first activity of will in the child is caused by the desire to gratify himself, to do something for his own pleasure. At this period he knows only this law of conduct.

Essential Thing in Development of Will. — The essential thing in the development and training of the will is, not to compel it to yield to the commands or demands of another will stronger than itself simply because it is forced to do so, — this is merely breaking or crushing the will by superior force, — but to bring it to act freely and readily in accordance with the requirements of an external, ethical law of conduct imposed by some recognized and legitimate authority.

How secure this. — To secure this there must first be a proper development of intelligence, of right thinking, accompanied by healthful and naturally related feeling;

thought leads to feeling, thought and feeling lead to willing. The three activities are inseparably connected in the normally constituted mind. The will is not "thought in action," but it is the impelling force which makes action correspond to thought, or puts thought into action.

The successive Steps. — Admitting the correctness of these last statements, it will be easy to trace the successive steps in the right development and training of the will. By the progressive increase of intelligence the child is led to discover and to represent consciously and clearly to himself one exterior law of conduct after another, until finally he comes to recognize and represent the highest possible law, and also, the reasons for conformity to this law.

Along with these acts of the intelligence the correlated feelings are awakened which, culminating in desire, impel the child to realize his thoughts, his representations, in appropriate conduct. This impulsion terminates in the final act of volition. The wisdom of the parent or teacher will appear in helping the child to think clearly the law of conduct, or more strictly, the conduct itself, and in making it easy as possible for him to conform to the law, or to put his thinking into action.

Deductions from the first law of development.

First Deduction. — *The time of school life is naturally and conveniently divided into three periods.* All educators and teachers recognize certain stages of progress in the process of development and training. As to the number of stages or periods, there is considerable variety of opinion. Agreement upon this point is not impor-

tant, nor could it be expected, since all do not adopt the same basis of division.

Lange. — Lange makes the degree of development of the apperceptive or assimilative power the ground of division, and recognizes (1) early childhood up to the seventh year, (2) advanced childhood, extending from the seventh to the tenth year, (3) riper boyhood and girlhood, the period from eleven to fourteen, (4) young manhood, the period from fifteen onward to the time of full maturity.

Laurie. — Laurie, in his "Institutes of Education," recognizes six successive stages of mental development. The child passes through five of these before reaching full maturity.

(1) Babehood, — first year of life.

(2) Infancy, — from the second year to the eighth.

(3) Childhood, — from the eighth to the fifteenth year.

(4) Boyhood and girlhood, or the juvenile period, — from the fifteenth to the eighteenth year.

(5) Adolescence, — from the eighteenth to the twenty-second year.

(6) Manhood and womanhood, — from the twenty-second year onward to maturity.

Our Divisions. — We prefer to recognize three periods, for reasons which will appear as we proceed. While these periods cannot be separated by sharply defined lines, yet each one of them is characterized, in a general way, by the predominance of some special form of mental activity and by other well-marked peculiarities. The transition from one period to the next is by very gradual and almost imperceptible steps, corresponding to the progress of mental development.

Periods not bounded by Years. — It will consequently

be impossible to bound these periods by years, excepting in a loose, general way. Some children are as much developed in every respect at six years of age as others are at eight or nine; some as much at twelve as others at fourteen or fifteen. The differences are sometimes due to original, native endowment, and sometimes, perhaps more frequently, to home influences and surroundings.

First Period.— The first school period is childhood. This is the primary or elementary period, extending from the time of entering school to the tenth or eleventh year. As before stated, the limitation by years is only general and of little value. The previous years spent at home or in the kindergarten, may be called the period of infancy. Childhood, however, is only a continuation of infancy so far as mental characteristics are concerned.

The following are some of the most obvious characteristics of this elementary period: —

The Body.— The body is immature, weak, and not capable of continued effort in one direction. There is constant, varied, and apparently aimless activity. During waking hours the child is seldom entirely quiet unless under some strong restraint. Enforced quietness, for any considerable time, is irksome and painful. Nature demands frequent change of position and employment.

The Intellect.— The intellectual activities characterizing this period are mostly those of the senses. Sense-perception is the predominant form of mental action. The child is occupied chiefly in seeing, hearing, tasting, smelling, and handling objects about him. The "gateways" to the soul are wide open and in constant use. Confused and complex percepts crowd in upon the

mind through every avenue of approach. Memory is gradually acquiring considerable strength, indeed exhibits a good degree of power even in this period. Imagination manifests its incipient power, and judgment and reason begin to act, but in a feeble and unreliable way.

The Feelings.— The natural appetites are very vigorous and very little under control. The vital and organic feelings are strong, and exert great influence over the mental activities and over the conduct of the child. The simple psychical emotions are easily excited and as easily allayed. The feelings are exceedingly capricious and liable to sudden and violent changes.

The Will.— The will has very little steady and controlling power. It is, indeed, as "fickle as the wind," and cannot be depended upon to insure any uniformity of behavior or consistency of conduct.

The Moral Nature.— The moral powers and feelings exhibit but little strength and activity. Ideas of right and wrong are very indefinite, and feelings of obligation and duty scarcely manifest themselves. The child hardly recognizes, in the first years of this period, that others have rights of any kind. All privileges, enjoyments, and possessions are peculiarly his own and for his use and pleasure.

Second Period: Youth. — This is a transition period, extending from the tenth or eleventh year to the fifteenth or sixteenth, though the limitation of years is here also of uncertain value.

This period is usually marked by great variability and inconstancy of character and conduct. The yielding, plastic temper and disposition of childhood have disappeared, and the discretion, consistency, and reasonableness of maturity have not yet become established.

Characteristics of the Period.— The following are some of the most prominent characteristics of the period: —

The Body.— The body, though not yet matured, has become vigorous, and is capable of a good degree of regular and sustained effort. Activity has ceased to be aimless, but there is a disposition to indulge in rough and violent forms of physical exercise. The superabundance of vital energy and of mere animal spirits renders it necessary that provision be made for these to employ and exhaust themselves either in useful labors or in healthful sports and games. A judicious alternation of work and play is doubtless the best and most agreeable provision.

Very severe restrictions in respect to modes of "working off" the abundant supply of physical energy are always unwise and generally useless. The activity which affords relief to accumulated and pent-up energy is too pleasurable to submit cheerfully to unnecessary fetters.

The Intellect. — The senses are still vigorously active, but comparatively less so than in the period of childhood. The predominant and most characteristic activities are those of the representative and reproductive powers. The memory continues to be peculiarly receptive and tenacious. Lessons which do not require too much thinking and reasoning are easily mastered and retained. The imagination begins to exhibit great and growing activity. Images and notions of things not present are readily formed. The reading of vivid descriptions affords great pleasure. Well written books of travels, explorations, and adventures are eagerly devoured. During this period, facts of all sorts are gathered up for future use, and processes are learned

with great rapidity and delight. Enjoyment is found in doing things, in solving problems, and in mechanical operations and devices. The activities of judging and reasoning manifest considerable vigor, but are not yet worthy of entire confidence for care and accuracy in their decisions and conclusions.

The Bodily Feelings. — The natural appetites are peculiarly strong and active, and not easily restrained and kept within proper limits. Artificial appetites begin to be formed by imitation, and there is a restless craving for something new and exciting. It is the period of especial danger in respect to appetites, passions, and habits.

Mental Feelings. — The mental affections and desires develop with great rapidity and exhibit great energy. They are readily kindled into passions. Anger and other malevolent feelings are easily aroused, and not easily controlled and allayed. The better affections are active, but have need of constant cultivation and direction. The higher emotions only just begin to manifest themselves fully and distinctly.

The Will. — The will is increasing in power with a good degree of rapidity, but acts under the influence of considerations and motives near at hand. It has not yet acquired steady control over the other activities of the mind, and consistency of conduct cannot be expected. Attention to study is only partially volitional, being still, to a considerable extent, governed by external attractions and incitements.

The Moral Nature. — The moral powers are slowly developing, but are unreliable in their action. The idea of right is becoming more and more distinct, but is not yet well defined. Moral judgment and the con-

science manifest a good degree of activity, but the activity is intermittent and fitful. Passion and self-interest easily resist and overcome the impulses toward right, generous, and noble conduct. Feelings of obligation and duty follow closely the developing power of judgment and conscience. Feelings of approval and disapproval are more vivid and have greater influence in moving the will and in controlling the conduct. The egoistic feelings, however, are still stronger and more influential than the altruistic.

Third Period. — *The third and last is the period of maturity*, or the period in which the whole complex being is approaching maturity. This extends indefinitely onward from the close of the period of youth, and its general characteristics are so well understood that they need no extended description.

The Body. — The body is becoming fully developed and matured, and, if properly cared for, is capable of enduring severe and continuous labor. Provision must still be made, however, for proper and healthful physical exercise, and for the expenditure, by safe and agreeable methods, of the surplus vital energy with which early manhood is filled. It is vastly wiser to open legitimate avenues in which the innate and irresistible impulse to activity may find room and means for gratification, than to attempt to restrain that which, in the nature of things, can not be effectively restrained.

The Intellect. — This period is marked by the maturing and harmonious activity of all the intellectual powers, under the control and guidance of judgment and reason. The thinking activities exercise their natural and appropriate function of leadership and authority. The student now seeks, not simply for facts

to be stored up and processes to be mastered, but for causes, consequences, and relations. The material of knowledge, accumulated during the preceding periods, is more completely analyzed, classified, and employed as a basis for the acquisition of new knowledge.

The Feelings. — The rational feelings and especially the higher emotions manifest themselves in full strength, while the appetites and the lower feelings, in most cases, occupy a subordinate place. The affections and desires are more constant and consistent in their activity. Passions are strong and clamorous for gratification, but are generally subjected to the control of the higher and better principles of the soul unless the individual has surrendered himself to the dominion of some ruling passion, or debasing appetite.

The Will. — At the opening of this period, the will begins to assume its rightful position of mastership over the whole man. If the previous instruction has been wise, and the training has been effective, the will is able to hold the other psychical powers in proper subjection, and to keep the energies of the mind directed steadily toward any chosen purpose. It is no longer necessarily impelled to its determinations by the force of the so-called "strongest motive." By its own inherent energy it can give preference to one motive over another, and, within certain limits, can select the impulses to which it will yield. Until this power is attained the man is not complete master of himself.

The Moral Nature. — The moral powers, although slow in developing and maturing, begin to exercise their legitimate authority. If the influences and teachings of the home and school have been consistent and wholesome, the moral judgment is, by this time, fairly well

developed and instructed, and the conscience can insist successfully upon obedience to the decisions of the judgment. Ideas of right and rights, of obligations and duties, have become pretty clearly defined and firmly fixed. Conduct is determined and regulated by considerations of justice, benevolence, good-will, and humanity, unless passions are greatly excited and temptations are very strong. The nobler and better are known and approved, even though the dishonorable and the base are too frequently cherished and followed.

Second Deduction. — *Schools are naturally divided into three classes.* Each of the three classes may be subdivided into several minor varieties and grades, but certain essential characteristics will distinguish all the schools belonging to the same great class.

Basis of the Division. — The recognized existence of three great groups of related mental activities, following each other regularly in the order of their predominance, and the consequent recognition of three periods of school life, suggest and require this threefold division of schools. They also present a basis for a natural, psychological, and logical arrangement of subjects for study and instruction into progressive courses. The organization, management, studies, and instruction of a school must be adapted to the degree of development and to the mental activities of pupils in the period for which provision is to be made. Schools designed for childhood should differ widely and radically from those intended for youth; and the schools for mature students must necessarily, in many respects, be unlike both the other classes.

First Class. — *The first class consists of the Elementary or Primary Schools.* This class includes the kinder-

garten and all institutions for the instruction and training of young children. These must be adapted to the characteristics and needs of childhood in respect to buildings, furniture, apparatus, and appliances generally. The organization, management, subjects of study and instruction, length of sessions and of exercises, indeed everything, must be shaped with reference to the peculiarities of young children. Sense-perception being the predominant mental activity of childhood, instruction must be addressed mainly to the senses, especially to the sense of sight, but the assimilative activities must not be neglected.

Second Class. — *The second class includes all Secondary Schools,* or schools for secondary instruction. These might well be called intermediate schools, since they occupy a place between the elementary and the higher institutions of learning. The advanced grades of the so-called grammar schools and the lower grades of the high schools belong in this class. It may be that the entire high school and all academies and similar institutions should be placed in this division, although the most advanced work of such schools seems to fall within the province of the third class of higher institutions. These schools should be adapted, in respect to organization, management, studies, and all other things, to the characteristics, both physical and mental, of the period of youth.

Third Class. — *Advanced Schools.* This third class embraces any part of the ordinary high school which does not properly belong in the secondary division, all colleges, universities, and professional and technical schools of a high order. These schools must be made to meet the demands of the matured and the matur-

ing powers of manhood. Elementary and secondary studies, instruction, and methods are out of place in these institutions.

Manual Training Schools. — Manual training schools may be either of a secondary or advanced character, but in most cases they belong in the second class. They may be organized as independent institutions, or they may be attached to grammar and high schools. Their character will be determined by the needs, circumstances, and conditions of the localities in which they are situated.

Third Deduction. — *Means, appliances, and methods of instruction may be divided into three classes.* This deduction has been anticipated and considered, to some extent, under the last preceding head. It will be unnecessary to give it extended notice here. Methods of teaching must evidently be determined largely by the degree of development to which pupils have attained, and by the modes of mental activity which predominate at any particular period. We shall consequently have elementary, secondary, and advanced methods, or methods specially adapted to childhood, to youth, and to maturity. While this is true, it is also true that the line of separation between these different classes of methods is not so broad nor so sharply defined as is sometimes supposed. For example, elementary methods must be largely objective in their character; this is probably their peculiar and most distinctive mark. But objective methods, in certain branches of study, are almost equally necessary and profitable in schools of secondary and higher instruction, and it is very easy to carry objective methods to a harmful extreme even in the primary school.

Purpose of the School Modifies Methods. — The means and methods of instruction must also be modified, to a considerable extent, in schools above the primary, by the purpose or object for which the school is established. If it is the design of the school to promote general development and culture, methods of instruction, illustration, and explanation will be shaped accordingly. If the object of the school is to prepare the pupils for business, for positions in stores, shops, and manufacturing establishments of various kinds, methods must be modified so as to accomplish this purpose most directly and effectively. Such special modifications can be readily made by teachers who understand clearly the general principles which govern, or should govern, the whole matter of means and methods of teaching and illustrating.

Obviously training, or drill in applications and use of knowledge, must occupy a much larger place in the instruction of technical and industrial schools than in institutions for general culture.

Second Law of Development. — *Law of condition of development. The powers of the human being are developed, strengthened, and matured only on condition of proper exercise, of self-activity.* In theory this will be assented to by every one, but in practice it is often disregarded, both in the home and in the school, in the treatment of young children. Without fitting exercise there can be no normal development, no healthy growth, no firmness or solidity of fibre or tissue.

The Body. — This is as true of the organs of the body as of the activities of the mind; as true of the emotions and of the will as of the intellect. The unused limb never attains its proper size or its rightful degree of

strength and vigor. It is dwarfed, weak, and practically useless.

The Intellect. — The unused mental power suffers in like manner. Without appropriate exercise the perceptive activities remain in a condition of perpetual infancy. Memory and imagination never get beyond a feeble childhood. Judgment and reason do not reach the strength of true manhood.

The Feelings. — Without fitting use the emotions, affections, and other feelings are not developed and made to contribute to the enjoyment and adornment of life. Without such exercise the sentiments of friendship, love, sympathy, pity would have very little of depth, purity and beauty. When these and other kindred feelings remain uncultivated the human being is heartless, insensible, only the mere empty image of a man.

The Will. — The will suffers not less than the other powers from the lack of appropriate exercise. The inefficiency, almost utter imbecility of many men and women, when brought into actual contact with the affairs of real life, is the natural consequence of the neglect to give proper employment, during the period of childhood and youth, to the activities of examining, comparing, choosing, and determining. Such persons are never able to make up their minds how to act or what to do, until the time for action has passed. As a result, they can never conduct business successfully for themselves; they must, all their lives, submit to be employed and directed by others.

The Moral Powers. — The moral powers are subject to the same universal law. Without exercise moral perception, judgment, and the conscience exhibit very little energy, and give no valuable assistance toward the

right direction of life and conduct. The child who has never been allowed or required to think out and decide moral questions for himself, drifts and floats with the current into which he happens to fall, as soon as he finds himself free from the direction and restraints of the home. That it is so is more his misfortune than his fault; he has no moral strength because his moral powers have had no freedom of action.

Inference or Deduction. — General inference from the second law: *Adequate provision should be made, in all kinds and grades of schools, to afford needed and appropriate exercise to both the physical and mental powers of pupils.*

The kind of provision which should be made must be determined, in each case, by the class and grade of the school, by the means at command, and by surrounding conditions. The provisions required in an elementary school will be different from those demanded in a secondary or in an advanced institution. The things needed in a city will, in many respects, differ from those needed in a rural district. The provision required in different localities will vary, to a considerable extent, on account of the differences in conditions, occupations, and industries among the people. An attempt to secure uniformity of school arrangement, management, and studies, throughout the entire State would be unwise; regard should be had for local conditions and peculiarities.

The next law and the deduction from it will indicate only the provisions necessary to secure the desired activity of the mental powers. In respect to the body no further suggestions are required.

Third Law of Development. — *Law of means of develop-*

ment. Appropriate matter for investigation and study, properly presented to the mind, excites the necessary exercise, self-activity.

The term "matter" is here employed to denote all objects and subjects of observation, thought, and study which may be placed before the child in the primary school, or before the advanced student in a higher institution. The law affirms that, if the matter and the mode of presentation be both appropriate, activity will be produced. Proper presentation involves several important considerations which may be conveniently illustrated by reference to the analogy between the conditions of bodily and mental action.

Analogy between the Physical and Mental Activities. — The mere introduction of food into the stomach excites immediate and healthful activity of the digestive and related organs, provided certain essential conditions have been observed.

First Condition. — The food must be of the right kind, such as is adapted to the physical organism of the human being. It must also be appropriate to the age, to the present state of the digestive apparatus, and to the immediate wants of the body. The young child and the mature man cannot be fed with the same diet, nor is the same kind of food suited to all states of the body either of the child or man.

Second Condition. — The food must be in proper form or condition. It is not enough that the food is right in kind, it must also be properly prepared. Vegetables are wholesome and palatable when well cooked, but usually offensive to the taste and injurious to the digestion when raw or badly cooked. Fruit, ripe and mellow, is most excellent and appetizing; unripe or over-ripe,

it provokes disgust and pain instead of pleasurable activity. The same is true of all articles of diet.

Third Condition. — The food presented and taken at one time must be just sufficient in quantity, neither too much nor too little. Too much over-taxes and wearies the organs of digestion, and their work is impeded and improperly done. Assimilation cannot take place; irritation and disease of the organism follow. Too little leaves a painful and continual craving. The body does not develop into a vigorous, healthful, and symmetrical maturity; it becomes dwarfed, angular, lean, and ungraceful. The quantity will be determined by the nature of the food itself, by the period of life, and by the immediate condition and needs of the system.

Fourth Condition. — Food must be presented and received at right times; presentations must be neither too frequent nor at too great intervals. The frequency will be determined by age, habit, condition of health, and other circumstances. The nature of the food must also be taken into account. Intervals of greater or less length must be allowed for rest and relaxation of the bodily organs, and for the accumulation of a new supply of nervous energy. Otherwise appetite becomes sated, all real zest is lost, and that which should be a source of legitimate pleasure is reduced to a wearisome and irksome task.

Fifth Condition. — Finally, food should be served in an agreeable and enticing manner. Manner is not easily defined, but it is readily comprehended and appreciated; it enters into all the processes of preparation and presentation, and, though often regarded as of small importance, it has much to do with the enjoyment and satisfaction afforded by the table.

The conditions here named in respect to food for the

body suggest at once and clearly enough those necessary to be regarded in the preparation and presentation of matter for study and thought to the mental activities.

Conditions applied in two Directions. — These conditions must be kept in view, (1) in preparing and arranging courses of studies and instruction for the different classes and grades of schools, and, (2) also, in deciding upon the form and manner in which particular studies and lessons shall be arranged and taught to individuals and classes. These two subjects require separate treatment, and the first only will be considered here, and that merely in a general way. The second cannot be fully discussed and thoroughly comprehended until certain fundamental modes of mental activity have been more carefully and critically studied, and some inferences have been drawn from them.

General Law for Courses of Studies. — The general law in relation to the arrangement of courses of study is very obvious and easily stated. Those subjects and branches of study, and those parts of studies which extend over the time of several school years, should be placed in the work of each period of school life which appeal most directly to the mental powers then especially active.

Studies of the Elementary Period. — The studies of the elementary schools and of the period of childhood must be those which naturally excite and call into vigorous action the perceptive powers. They should touch the senses and allure the senses to touch them. The child, at this time, is learning in the home, in the garden and field, and on the play-ground mostly through the organs of sense. Schools and teachers should be wise enough to recognize this fact and to fashion the work of the school-room accordingly.

Studies of the Second Period. — The studies of the secondary schools and of the period of youth should be such as appeal strongly to the representative and reproductive powers, to memory, conception, and imagination. The branches taught during this time should make much greater demands upon the activities of acquisition and retention than upon the judgment or the reason. Facts, processes, and truths must be learned even if they cannot be fully assimilated.

Studies of the Period of Maturity. — The studies of the higher schools and of the period of maturity will be those which require the especial activity of the thinking powers, conception, judgment, and reason. Studies demanding much of abstraction, classification, and generalization belong here, as do also those which call for the exercise of the moral powers to any considerable extent.

Knowledge needed to Construct a Course of Studies. — In order to construct a course of instruction properly one must have a thorough knowledge of the human mind, of the order in which its activities are developed, and of the nature of the various subjects of study, and of their proper correlation. He must know what powers of mind each study especially calls into action, and consequently what studies are necessary to secure the best activity and development of the whole mind. Studies arranged solely with reference to these considerations would form an ideally perfect course of instruction.

Conditions and Needs must be Considered. — Such a course is not, in most cases, entirely practicable. Other things besides ideal development and training must be taken into account. Regard must be had to special conditions and needs. Precisely the same course of studies is not desirable for every locality. The in-

dustries of the place, the occupation of the people, the length of time which pupils can spend in school, the number of teachers employed, and various other circumstances must be considered. Modifications should be made to meet and supply all just and reasonable demands of those for whose immediate benefit the school is established and supported. It is generally unwise to attempt to furnish an extended high-school course in small villages and in other places where the number of advanced scholars must be very limited.

Methods of Teaching must be considered. — It must also be remembered that the method employed in teaching a particular study or portions of a study, may determine its place in the course. For this reason thoroughly competent persons will make different and equally good arrangements of studies. One may place in the elementary period portions of a study which another relegates entirely to the high school. For example, geometry is usually regarded as a high-school study, but Dr. Thomas Hill, Dr. Harris, and others have shown very conclusively that the elements of this science may be taught successfully and profitably to young children. So may also the elements of botany, zoölogy, and mineralogy. The fitness of these and some other branches of study for a particular position in a course depends altogether upon the methods of teaching.

Deduction from the Third Law of Development.

First Deduction. — The primary relation of knowledge, that is, of all subjects of study, to the work and process of education is that of means to an end. The end proposed is the symmetrical development and right training

of the human being. The purpose is to secure right conduct and character. The various studies presented and pursued excite the activity of the psychical powers and afford them needed exercise, and thus produce development, strength, and skill. This is the fundamental relation, and the only one, which the third law necessarily involves. Studies are estimated in view of this relation, according to what is called their culture value, and are pursued for culture only.

This not the sole Standard of Value. — This standard for estimating the worth of knowledge is not to be accepted as the sole criterion of value. It gives one aspect of truth, but not the whole truth. There is also another standard of value, and the best result will be reached by using both. Knowledge sustains another relation to education, a secondary and subordinate, but still an important one.

Another Relation of Knowledge. — Knowledge is an end in itself. The acquisition of knowledge is one of the purposes of education. Children study and are taught that they may know, and that they may be able to use their knowledge for practical purposes. Thus it comes to pass that we have the standard of utility, and the value of different branches of study is estimated according to their supposed worth in money, or the use which can be made of them in business affairs and in practical life generally. The possession of knowledge, coupled with the ability and disposition to use it in the most effective manner for securing an honest and honorable living, to improve one's own condition and the condition of society, is an object worthy of the best efforts of pupils and teachers. But the great and sole aim of schools and other means of education is not simply to manufacture shrewd lawyers,

well instructed physicians, skilful engineers, competent managers of business affairs, and trained workmen in other departments of industry. These are all needed; but men fully developed and thoroughly trained in everything which goes to make up the highest and best type of manhood are more needed. The standard of utility alone should not be adopted.

The two Relations not Incompatible. — These two relations of knowledge to education are not necessarily hostile to each other or incompatible. They should both be recognized and regarded. Many studies are valuable for culture and practically useful at the same time. Sometimes the preponderance must be given to one class of studies, sometimes to the other, according to the demands of time and place.

Second Deduction: Teaching Defined. — This second deduction naturally takes the form of a definition of teaching.

Teaching is the proper preparation and presentation of appropriate material for observation and thought to the mind of the learner, the presentation being accompanied by all needed instruction and by all necessary stimulation and direction of the learner's mental activities in grasping, appropriating, and assimilating the matter presented.

What and how much proper preparation and presentation involve has been partially indicated in the illustration borrowed from the analogy of the action of the digestive organs. Other points will be noticed in their proper place.

Other Definitions. — "Teaching is causing another to learn. Teaching and learning are correlative terms; where there is

no learning there can be no teaching. Every one can teach; and, moreover, can teach that which he does not know himself." — JACOTOT.

"It cannot be the duty of the teacher simply to transmit to the pupil the material of knowledge or to communicate to him ideas, feelings, and sentiments, but to awaken, stimulate, and give life to mental activities." — LANGE.

"The two essential steps in teaching are, (1) the awakening of a desire to know, (2) the presenting of the objects to be known in such a manner as to occasion the appropriate activity of the learner's mind." — WHITE.

"Teaching is the process by which one mind, from set purpose, produces the life-unfolding process in another." — TOMPKINS.

"Teaching is the presentation of conditions for educative self-effort."

"Teaching consists in the presentation of the best conditions for the exercise of judgment." — PARKER.

The Teacher's Work. — These definitions of teaching set forth with sufficient clearness the general work of the teacher. It is the teacher's business to place the mind of the pupil and the materials of study face to face, so to speak; to bring them into such relations that the activities of the soul shall, of necessity, be aroused and allured to perform their appropriate work. Having thus excited the activities of the soul it is his further duty to give them right direction and all needed stimulation. In other words, he should teach the child how to observe, how to investigate, how to acquire and retain, — in brief, how to study, in the true sense of the term.

Direct and Stimulate with Skill. — But this direction and stimulation should be given so wisely and dexterously that the natural ardor of the child shall not be

chilled, nor his individual modes of action be too seriously interfered with and fettered. As much freedom as possible should be left to the pupil. All unnecessary restriction and constraint are irksome and irritating.

Practical Suggestion. — The importance of a high ideal cannot be over-estimated. Every teacher should have such an ideal. But in the daily work of the school-room it is neither necessary nor desirable that the teacher should have constant and conscious reference to the higher end of education. That will be best attained by doing well the ordinary work of instruction and training. The ideal is reached, as fully as it ever can be reached, by elevating and improving the actual.

Illustration. — The supreme end for which food is eaten is that the body may be developed, nourished, perfected. Food is merely a necessary means to this high purpose. Does any one when hungry and in a state of health ever have constant reference to this end in seeking and receiving food? Appetite craves and clamors, and we eat to gratify and satisfy its demands with little thought or care for anything better or higher. Yet the supreme end is most effectively and surely reached by being left altogether out of mind at the table. Regard is had for this in the previous selection and preparation of the articles of diet.

Application. — In providing for mental growth, strength, and perfection the case is essentially the same. Studies should be selected and arranged with reference to the attainment of the highest end. In the school and class the cravings of the mental appetite of the pupil, of curiosity, of love of novelty, of desire for the practical and useful, are almost the only things which need to be considered by the teacher.

Motives, etc. — It would be worse than useless to attempt to set some lofty ideal end of study before the young pupil. At first the child puts no real value upon his acquisitions in knowledge. He estimates these as he does the materials for his dinner, according to the degree of pleasure he experiences in receiving them. He has a mental appetite, which we name curiosity and love of activity. The gratification of this gives enjoyment; this enjoyment he desires and seeks. To this desire the teacher appeals, and, with the very young pupil, aims no higher.

A little later this natural appetite is modified and reenforced by the idea of utility. The growing child discovers that what he learns is of practical value to him; that he can make use of it and gain something by it. The teacher addresses this new motive and stimulates it to a proper degree, as he did the motive of pleasure. In this way the activities of the unfolding powers of the pupil are excited and the highest end of development and training is secured. Here, as in many other cases, progress toward the ideally perfect is all the more certain and rapid from the fact that the learner works without any conscious reference to the ideal or the perfect.

FOR READING.

Preyer's Infant Mind.

Lange's Apperception, Part I., section 3, and Part II., section 1.

Laurie's Institutes of Education, lecture xi.

Rein's Outlines of Pedagogics, Part II.; topic, Selection of subject-matter of Instruction.

White's Pedagogy; topic, Principles of Teaching.

CHAPTER VII.

LAWS OF MIND AND OF TEACHING.

What the Laws of Development indicate. — The laws of development and the deductions from these laws, considered in the preceding chapter, indicate the different stages and steps of the processes of education; the essential character of the schools adapted to each of the stages; and the general order in which subjects of study should be presented.

They do not determine Method.— They do not, however, determine the form and manner of presentation, or that which is usually called "method" in teaching. The term "method" has fallen into some disrepute in consequence of careless use and too frequent repetition, but no satisfactory substitute has been furnished to express the idea represented.

What Method is. — Method is merely the way of reaching an end. "All method," says Hamilton, "is a rational progress, — a progress toward an end." Methods in teaching are ways by which the teacher seeks to reach some desired result. The method includes the whole series of processes and acts involved in arranging and presenting the matter of a single lesson or of any number of consecutive and related lessons.

How Methods are determined. — Methods of teaching must be determined by the natural modes of the mind's activity. The teacher's ways of working must conform to the mind's ways of working. Right methods of

teaching can be learned only by observing and studying carefully the forms of activity which the mind exhibits, when acting naturally and spontaneously, in reaching desired ends.

Illustrations from Physical Science. — The student of physical science seeks to discover how the forces of nature act when left to themselves, that he may learn the methods by which these forces may be so directed as to subserve his purposes and to work for the accomplishment of his ends. He experiments, questions, and watches. He listens, follows, and obeys, that he may learn how to master and command. Having ascertained that natural forces act in the presence of certain conditions and in a certain order, he creates and arranges the required conditions and conforms to the necessary order. His methods are merely copies and imitations of nature's methods. His success is in proportion to his ability to discover and appropriate the ways of nature.

What the Teacher does. — The true teacher imitates the scientist. In seeking to determine the methods by which desired ends can be reached most readily and surely, in the school and in the class, he studies to discover what forms of activity the learner's mind naturally puts forth to accomplish certain results; and in what order these forms of activity manifest themselves and follow each other; and what conditions and circumstances appear to be necessary to render these mental activities most vigorous, most productive, and most pleasurable. Having made such discoveries, he has only to create the required conditions as the scientist does, to follow the mind's own order, and to adopt the mind's own method of working.

Different Forms of Mental Activity. — Some forms of mental activity are common to all periods of life, to all stages of development, and to all possible conditions. These activities are essentially the same in nature and character whether they are exhibited by the child or the man. They differ in degree of perfection, and in productiveness. Other forms of activity are peculiar to certain periods of life, or are predominant in these periods, to special stages of development, and to particular conditions and circumstances. Some of these belong to early childhood, some to youth, and some to mature manhood.

General Laws of Mind.— Statements of these universal or general forms of mental activity give us what may be called general laws of mind. These constitute primary and fundamental principles of the science of education, or pedagogics.

General Laws of Teaching. — From these general laws of mind equally general laws of teaching may be deduced. These constitute the basis of the art of teaching, or pedagogy. Such general laws determine general methods of teaching.

Special Laws of Mind. — Statements of the forms of mental activity peculiar to particular periods and stages of development afford special laws of mind. These constitute secondary and subordinate principles of the science of education.

Special Laws of Teaching, — From these special and subordinate laws of mind subordinate or special laws of teaching are deduced. These include most of the so-called "educational maxims," and are of practical value when rightly applied within proper limits. When elevated to the rank of general laws, and applied to all

periods and all stages of development, they become sources of confusion, and lead inexperienced teachers into absurd and harmful ways of working. Such subordinate principles can only determine methods of instruction adapted to particular periods, stages, subjects, and conditions.

Object in this Chapter. — In this chapter an effort is made to state briefly the most obvious and important general forms of mental activity under the head of general laws of mind, and to give the natural deductions from these under the head of corresponding laws of teaching. If the laws of mind are correctly stated, the laws of teaching must be true.

Four Inquiries. — All that is most essential to the teacher in the study of the natural modes of the mind's activity can be conveniently considered under four heads: (1) How, or in what form, does the mind naturally grasp or receive the materials of knowledge? (2) How, or by what processes, does the mind proceed to transform this material into real knowledge, — that is, to assimilate it? (3) How, or by what means, does the mind retain this knowledge, and reproduce it when desired? (4) What are the essential conditions of most efficient and most productive mental activity, or under what conditions can the mind do its best work? If these inquiries can be satisfactorily answered, we shall have four general laws of mind, and four corresponding laws of teaching.

I. *Form in which the Material of Knowledge is received.*

We have first to ascertain in what form the material of knowledge is naturally presented to the

mind. The senses are peculiarly the presentative powers. Through these the mind receives the beginnings of all its acquisitions. The starting-point is sensation. Leaving out of consideration the first few days of life, the senses of the perfectly formed child are all simultaneously active. Sensations of sight, hearing, touch, taste, and smell crowd themselves in upon the mind in a confused mass.

Illustrations. — A peach placed, for the first time, in the hands of a child appeals to his knowing powers through touch, sight, smell, and taste. Even the child's rattle excites sensations of touch, sight, and hearing. Almost all natural objects present themselves through more than one of the senses. All the material of knowledge is forced upon the young child in the form of confused masses and aggregates of sensations. With the world as it is, no other method is conceivable.

The Senses act in the Same Way at all Periods of Life. — The senses deal in the same manner at every stage of development. A new object, such as a flower or a fruit, brought before the adult, excites a similar variety of sensations, and presents them in like confused aggregation. The acquired power to discriminate, select, separate, and give attention instantly to one sensation, or one class of sensations, and to disregard for the moment all others, make the mature mind almost unconscious of this fact.

The Activity of any Individual Sense. — Sight. — Not only the simultaneous activity of several senses, but also the separate activity of any individual sense, confirms the truth of the law. All things within the range of vision thrust themselves at once and together upon the opened eye. All varieties of form, color, size, and surface

excite their own peculiar sensations. Each individual object offers itself as an indistinct and confused whole, however irregular its form, or great its extent, or various its colors, or complicated its parts. From any point of observation upon which one stands for the first time, the eye glances almost instinctively over the whole landscape, however wide, before it fastens itself upon any individual object. It takes in the outlines of mountains, hills, valleys, woodlands, cultivated fields, villages, farm-houses, all as one confused whole. On a narrower scale, the eye takes in the whole building, the whole picture, the whole animal, man, tree, fruit, flower, or whatever is presented.

Limitation of the Whole of Sight. — The whole of sight must necessarily be limited by the limits of the power of vision. This whole of sight-perception is, therefore, often only a little fragment of a greater whole, — a little corner of a much wider field. One looking up into the sky on a clear night sees but few of the millions of stars; but as far as it can penetrate, the eye notices first the obscure and confused whole. By previous instruction or agreement, the attention may be directed to some small part of the great whole, or to some particular element of the aggregation. In this case, the mind acts by compulsion and restraint, and not spontaneously.

Action of the Sense of Hearing. — The action of the ear is similar to that of the eye. The sensations and percepts of hearing are of the same character as those of sight in respect to extent. The whole multitude of sounds with which the air may be filled at any time strike upon the auditory nerves, and demand admission at the same instant. All the notes of an orchestra, and all the tones uttered by the hundred voices

of a choir, present themselves as one great aggregate of musical sounds to the sense of hearing. The voices of a crowd conversing mingle into a confused volume of sounds.

Action of the other Senses. — The senses of touch, smell, and taste act within narrower limits than those of sight and hearing, but their actions conform to the same general law.

Action of the Representative Powers. — An appeal to consciousness or to observation shows that the representative powers are subject to the same law in their action. They seek to form at once a complete mental picture or notion of anything described or recalled. An outline, dim and shadowy perhaps, is produced, as speedily as possible, of the whole scene, event, transaction, proposition, or problem brought before the mind. The thinking powers demand this general view of the whole before they commence to exercise their peculiar activities. The whole proposition, in outline at least, must be presented before the judgment will consider it; the whole problem before its solution will be attempted; the whole picture before a decision is made as to its beauty; the whole plan before its feasibility can be passed upon.

The Mind insists upon beginning with the Whole. — The mind, in all its various modes of activity, insists upon beginning its work of getting real and definite knowledge, as far as possible, with some sort of a whole. If the great whole is too extensive to be apprehended by a single effort, it seeks for some subordinate unit or part of this which shall contain the element of completeness in itself, and which can be considered in such a way that satisfactory conclusions and definite results may be reached.

Necessary Inference from the Law.— The inference from this law, which may be called the law of apprehension, in respect to the presentation of topics of study and investigation to the learner, is obvious. The teacher should adopt such a method that the mind can exercise freely its own natural modes of action upon the matter presented. Subjects and objects should be brought before the child in the school, as they are elsewhere, as wholes or units. The element of completeness should be contained in every presentation.

II. *How the Mind proceeds in Assimilating the Material received, or in Transforming it into real Knowledge.*

Hamilton says: —

"This is what appears to me to take place with children. They first know, they first cognize the things and persons presented to them as wholes. But wholes of the same kind, if we do not descend to their parts, afford us no difference, — no mark by which we can discriminate the one from the other.

"We may make a single object of attention either of a whole man, or of his face, or of his eye, or of the pupil of his eye, or of a speck upon the pupil. To each of these objects there can be only a certain amount of attentive perception applied, and we can concentrate it all on any one. In proportion as the object is larger and more complex, our attention can of course be less applied to any part of it, and consequently our knowledge of it in detail will be vague and more imperfect. But having first acquired a comprehensive [general and vague] knowledge of it as a whole, we can descend to its several parts, consider these both in themselves, and in relation to each other, and to the whole of which they are constituents, and thus attain to a complete and articulate knowledge of the object. We decompose, and then we re-

compose. But in this we always proceed first by decomposition, or analysis. The first procedure of mind in the elaboration of its knowledge is always analytical. It descends from the whole to the parts, from the vague to the definite."

In this work the mental processes of the child are evidently the same as those of the man. Both grasp and observe first the whole; then analyze it, discriminate its elements and parts and compare them, thus discovering the points of difference and resemblance.

Mr. Sully says: —

"The essential operation in all varieties of knowing is the detecting of relations between things. The most comprehensive relations are difference or unlikeness, and agreement or likeness. All knowledge means discriminating one impression, object, or idea from another or others, and assimilating it yet to another or others. I perceive an object as a rose only when I see how it differs from other objects, and more especially from other varieties of flowers, and at the same time recognize its likeness to other roses previously seen."

Experience. — Personal experience and observation unite in testifying to the correctness of these statements. It is obvious enough that the mind, having first grasped or apprehended the whole in a very general and indefinite way, proceeds immediately and spontaneously to direct its attention to one part or element, and then to another, until all the parts or elements have been in turn thoroughly examined. The indefinite and comparatively valueless notion, obtained by mere apprehension of the mass, is replaced or succeeded by the clear, full, and accurate knowledge of complete comprehension secured by the separation and subsequent reuniting of the elements.

III. *How Knowledge is Retained and Reproduced.*

We are next concerned to ascertain how the mind naturally and spontaneously assimilates and arranges its acquisitions so that they may be surely and readily reproduced. By an appeal to consciousness, we discover that the elements of our knowledge, the various things which have been successively learned, do not remain separate and distinct in the mind, but have in some way become united into an orderly, well-arranged, compact whole. Every new acquisition has entered into union with previous acquisitions, has been modified by them and assimilated to them. Sometimes it has happened that the new has modified the old in entering into union with it; new facts have compelled old ones to assume new forms, to take on different aspects, to submit to more or less of modification in various directions.

Effort of Mind. — We discover that the mind naturally endeavors to unite the new with the old, to place new individual objects in previously formed classes, to subordinate new ideas, as far as possible, to old ones, and to reject the new if it cannot be assimilated with the old. We discover that union takes place between the materials of knowledge, between the parts and elements of new things, and between the new and the old, only when certain relations exist between them. Like will unite with like; similar with similar; opposites with opposites, if they are natural complements of each other; the merely contiguous with the contiguous, under certain conditions. The relations which cause such unions are called laws of assimilation or association, and are supposed to be familiar to students of psychology.

Conclusions. — The results of our study thus far of the spontaneous modes of mental activity may conveniently take the form of certain general laws of mind and of correlated laws of teaching.

General Laws of Mind.

I. *First Law of Mind: Law of Apprehension.* — The mind, at all periods of development, naturally grasps or receives the material of knowledge in the form of aggregates, wholes, or units, as far as this is possible.

II. *Second Law of Mind: Law of Comprehension, or Learning.*

(*a*) In studying, arranging, and assimilating the materials of knowledge received, the mind proceeds, first, by way of analysis, from wholes to parts, from aggregates to elements, thus attaining definite and complete knowledge.

(*b*) Secondly, the mind proceeds to unite the new knowledge with its previous acquisitions, and also, by way of synthesis, to unite the parts and elements which it has found into new wholes, thus extending its knowledge and rendering it productive.

General Laws of Teaching.

I. *First Law of Teaching: Law of Presentation.* — The teacher should present the material of knowledge to the mind of the learner in the form of aggregates, wholes, or units, as far as possible.

II. *Second Law of Teaching: Law of Instruction.*

(*a*) The teacher, in aiding the learner to acquire definite and complete knowledge, should proceed, first, by careful and systematic analysis, from wholes to parts, from aggregates to elements, giving all needed explanations and illustrations.

(*b*) Secondly, he should assist the learner in discovering the natural relationships between the new and previous acquisitions, and should also give him much practice in forming new wholes from the parts and elements obtained by analysis.

III. *Third Law of Mind : Law of Retention and Reproduction.* — The mind assimilates, retains, and reproduces its acquisitions by the use of certain natural relations, called principles or laws of association. The effectiveness of these laws is largely increased by certain conditions of body and mind.

III. *Third Law of Teaching : Law of Assimilation and Association.* — The teacher, in preparing and arranging the matter of lessons, and in giving instruction, should have constant reference to the natural principles or laws of association, and should endeavor to produce in pupils favorable conditions both of body and mind.

Applications. — These are the great fundamental laws of learning and teaching. Their proper application covers a large part of the teacher's work in all classes of schools. Such applications will be best illustrated and understood by some practical examples borrowed from the common branches of study.

Discrimination of Sensations. — Up to the time of entering school, the child has been learning chiefly through his senses. Impressions made upon the various sensory nerves have produced in the mind confused and crowded masses of sensations. The earliest conscious psychical activity consisted in the recognition and discrimination of sensations. From the confused aggregate forced in upon the soul, one kind of sensations was first distinguished from another kind. Sensations of sight were distinguished from those of hearing; sensations of taste from those of smell; sensations of touch from all others.

Discrimination of Percepts. — As perception immediately follows sensation, the objects which excite sensations were next discriminated. From the great mass of

objects surrounding him, the child began, by an incipient and imperfect analysis, to distinguish one object from another and from all others. Within a short time, by an equally imperfect synthesis, he commenced to group together into rudimentary classes objects in which he discovered resemblances. Thus early the fundamental activities of discrimination and assimilation began to manifest themselves. The relations of likeness and unlikeness, of similarity and contrast, and probably even of contiguity, are spontaneously, and perhaps unconsciously, made the bases of union and of separation.

At School Age. — At school age the child has made wonderful acquisitions of knowledge. He has become acquainted, in a general and superficial way, with hundreds of objects, with almost innumerable qualities and characteristics of these objects, with the spoken signs of all these objects and qualities, and he has associated, without conscious effort, these objects and the signs by which they are named and described. He has been constantly grasping the wholes within reach of any of his senses, analyzing them, imperfectly indeed, but as well as his unfolding powers enable him to perform the work, discriminating, comparing, separating, and combining. He has already a considerable mass of partially compacted knowledge, ready and waiting to be of service in the work of the school.

Beginning of School Work. — The wisdom of the school and the teacher will be manifested by meeting the child on his own ground, by making skilful use of his previous acquisitions, and by following the order and method which the child has been following under the impulsion and guidance of his own nature. Sense-perception is still the predominating mental activity. School instruc-

tion will recognize this fact, and will begin with objects and objective methods, not forgetting that provision should be made to give appropriate exercise to the representative and thinking activities.

Teacher's Office. — The teacher's office, as indicated by these laws, is, first to separate the subject matter of any study into natural and appropriate parts or units, and to present these successively, at proper times and in proper form and manner, to his class. Having made such presentation, he should proceed to aid and guide in the processes of analysis, discrimination, and comparison, and in the subsequent synthesis, giving all needed direction and stimulation to the mental activities. The mind of the child will usually take the right direction if matter is properly presented, and if there are not too many interferences and hindrances on the part of the teacher, under the name of helps. The spontaneous power of self-direction in the mind is often underestimated, and the child's self-reliance is destroyed by an over-much of what is called assistance. One does not learn to walk alone by being always carried or led.

Applications of Laws. — The practical application of the laws of teaching will be best understood by concrete examples borrowed from school work in some of the common branches of study. In the earliest school instruction much use is made of real objects, the objects employed being sometimes selected and arranged according to a regular, predetermined plan, and sometimes without any apparent plan or purpose. Such instruction is named "object teaching," "science teaching," or "language work," according to the fancy of the teacher. The work done is essentially the same, what-

ever name may be applied to it, or whatever order may be adopted. The child is learning objects, qualities, acts, and relations, and the names or signs by which these are designated and described, and is associating these together so that hereafter either will readily suggest the other. Each new object, or quality, or act, is interpreted by previous acquisitions, is assimilated to them and classified with them, as far as possible, and in turn becomes the means of interpreting and assimilating other new acquisitions. A single example will be sufficient to illustrate these various processes.

Example of an Object Lesson. — Suppose an orange presented for examination to a child who has had no previous acquaintance with oranges. He immediately, spontaneously, and almost unconsciously compares it, in respect to general appearance, with objects previously known which it most resembles, and names it accordingly, if no name is given him. This is, in effect, hasty and imperfect classification, to be confirmed, or modified and corrected, by further and more complete knowledge.

Steps of Progress. — The first impression consists of a confused aggregate of sensations, resulting in an indefinite notion or percept of a small mass of matter of a certain form and color having a peculiar odor. With a little guidance the child proceeds to analyze this aggregate of sensations and to discover what each of the senses has contributed to the mass, and, consequently, what qualities or characteristics are combined to make up that something which as a whole is named orange. Sight has furnished the partial percept of color; sight and touch have contributed partial percepts of size, form, character of surface, and, if the orange is dis-

sected, of the various parts; smell has revealed the odor, and taste, the flavor; touch, with muscular exertion, has given information as to weight and hardness or softness. Through this analysis, definite and complete knowledge of all the parts, qualities, and characteristics is obtained.

The Result. — The union or synthesis of all these partial concepts, made spontaneously by the mind of the learner, gives the complex and complete percept of the object, which now takes its place among the permanent acquisitions of the child, being properly assimilated and combined with previous knowledge. In this case the teacher's work consists mainly in giving wise direction to the spontaneous activities of the pupil, checking his tendency to dwell too much upon the accidental and unimportant, securing an orderly and consecutive progress in passing from one part or quality to another, and supplying such new words as may be necessary for the proper expression of the new ideas. The method of procedure will be essentially the same in all lessons upon individual objects, and in many lessons in elementary science. When the purpose, in science teaching, is to reach the conception of a class or of a general truth, other steps must be introduced, which will be considered in another place.

Elementary Reading-Lessons. — Methods of teaching young children to read naturally fall into two classes, the analytic and synthetic. The distinction, however, disappears practically after the child has made a few steps of progress, and analysis and synthesis are both employed in securing the best results. The alphabetic and phonic methods are both synthetic. The first commences with elements addressed to the eye, letters;

the second begins with elements addressed to the ear, sounds. Both proceed to combine elements, by a synthetic process, into wholes in the form of words and sentences. Three other methods, though the three are really only one, the word, sentence, and thought methods, are analytic, beginning with wholes in the form of single words or short and simple sentences. After a few words or sentences have been taught as wholes, they are separated into their elements, that is, into single letters and sounds by analysis. These elements are then combined by synthesis to form new words and sentences.

The Correct Method. — It is easy to see that the analytic methods conform to the general laws of mind, and should for that reason be preferred. In all teaching the maxim, "*Proceed from the known to the unknown*," rightly interpreted, should be regarded. The maxim may be understood to mean this: when presenting a new subject or a new lesson to a child, make what the child already knows the starting-point, and from this lead him, by natural and easy steps, to grasp and master the new, the now unknown thing. The known, selected as the point of departure, should be chosen with careful reference to some obvious relation existing between it and the unknown thing which is to be learned.

The Known to the Child in the Reading-Lesson. — The child, commencing to learn to read, knows many objects, qualities, acts, and relations of things; and he also knows the spoken names or signs of all these. The spoken signs, that is, the words, are known as wholes; and the words and what they represent are thoroughly associated in the mind, so that either will immediately suggest the other. So much is the known. The un-

known consists of new signs, addressed to the eye, that is, written and printed words. These are to be learned and mentally associated with the spoken words and also with the objects and acts which they represent. The spoken word, or sentence, is here the starting-point. The step from this to the written word, or sentence, taken as a whole, is short, direct, and easy. It conforms to the law: Begin with the whole, or with a unit.

First Step. — Teach first, therefore, a number of words or short sentences as wholes. This work can be done most effectively by the use of the blackboard and crayon. The maxim, "*One thing at a time*," should be kept in mind. Do not try to teach too many new words at one lesson. Sometimes a single new word will be enough. When the new words have certain similarities to words already taught, several may be included in a lesson, perhaps three or four. Suppose the sentence, "The boy runs," has been taught. Taking this as a beginning, introduce new words to form the sentences, The *girl* runs, The *horse* runs, The *dog* runs, and so on indefinitely. The sentence may be varied in other ways; as: The boy *walks*, The boy *sits*, The boy *stands;* or, after several nouns and verbs have been learned, in this way: The boy runs *up the hill;* The boy runs *down* the hill; The boy runs *over* the hill. Another change should be made at the proper time, by introducing the plural number, as: *The boys run.* The attention of the class should be directed to the slight changes in the forms of the words, and several sentences should be taught, to illustrate these changes.

These examples are sufficient to show what is meant by beginning with a whole in teaching young children to read. This method imitates and follows nature, and

it also goes from the known to the unknown in a natural way. This is merely the first step, however.

The Second Step. — The second step is to analyze or separate the words which have been learned as wholes, into their parts or elements; that is, into the separate letters and sounds of which they are composed. Until this is done they are not thoroughly learned. This analysis should be made clear both to the eye and ear. For example the word *dog* may be written on the board in the usual form, and pronounced in the usual manner. Then it may be written with the letters separated, thus: d o g, and the sound of each letter may be uttered separately and distinctly. In this way, or in some other, if a different way is preferred, the work of analysis should be carried on until all the letters are learned, and most of the elementary sounds. The diacritical marks may be taught and learned in connection with this analysis.

The Third Step. — Pupils are now prepared, if the work thus far has been thoroughly done, to begin the third step, the synthetic work. This consists in combining the parts and elements obtained by analysis to form new words and sentences. The child is now able to learn new words with very little assistance, and to carry on both the analytic and synthetic work very easily and rapidly. Analysis precedes and prepares the way for synthesis, but from this point both processes are constantly employed.

Principles of Association employed. — In teaching elementary reading, the first law of association employed is that which binds together the sign, that is the name, with the thing signified, the object, act, and so forth. The end sought in teaching, at this time, is to make this

association so firm that the thing will instantly suggest the sign, or the sign the thing, and also to associate the oral sign or word with the written one so thoroughly that either will immediately suggest the other. The child is not prepared to use a book profitably until this has been accomplished.

The law of similarity also does valuable service in the early stages of this work, as it does in the more advanced stages. If the form and sound of the letters *at* have been learned in the word *cat*, they should be recognized at once in the new words presented, such as *hat*, *sat*, *rat*, *mat*. If the sentence, "I have a book," has been taught, then the similarity of such sentences as "You have a book," "We have a book," and so on, will make the work of learning very easy. Examples might be multiplied, but these are sufficient to show in what direction the teacher's duty lies. This law of similarity is of constant service in all language work from the lowest to the highest grades, and should be observed in the preparation and arrangement of all lessons.

Laws applied to teaching Language. — In the more formal study of language, of which learning to read is the beginning, the sentence is the natural unit, since it represents or expresses a complete notion or idea. Instruction should, consequently, according to the law of presentation, commence with the sentence. Begin here, as in teaching reading, with what children already know, that is, with familiar oral sentences. The work may conveniently be divided in successive steps.

First Step. — Teach children to express their ideas concerning common objects and acts in correct oral sentences. Give much practice in this, guiding them by questions and suggestions to form all the various

kinds of simple sentences. When mistakes are made, lead them to make corrections for themselves, as far as this is possible without waste of time.

Second Step. — As soon as children are able to write with some facility, give them abundant practice in writing sentences of all kinds. Interest in this work will be increased by having the sentences united to form connected descriptions and short stories. Simple stories may be read or told by the teacher or by some of the pupils, and the children may reproduce these, sometimes orally, sometimes in writing. This kind of language work, with natural variations and additions, should be continued through all the primary grades. Sentences of all forms and varieties are thus learned as wholes.

Third Step: Analysis. — After a good degree of facility in constructing sentences has been acquired, the work of analysis should be commenced. First the main parts of sentences, the subject and the predicate, should be learned; then, one after another, the various modifiers; and finally, all the parts of speech with their variations of form and use. This part of the work should not be hastened, and everything should be made as clear as possible.

Fourth Step: Synthesis. — The synthetic work, which consists in putting together the elements of sentences to form new sentences, should be commenced in connection with the analysis, or as soon as the elements and parts are well understood. Exercises in forming sentences containing particular nouns, verbs, adjectives, adverbs, prepositions, and so on, will be profitable and interesting. As pupils advance in their work the synthetic processes will include the writing of stories, essays, and descriptions of various kinds.

The Productive Work. — It should be observed that here, as in all studies, the analytic work is, in reality, only preparatory to the synthetic. The latter is the productive work. Too much time and labor are frequently spent upon analysis, and too little upon the constructive processes. The ability to take things to pieces is of less value than the skill which helps one to put them together, or to make similar new things.

Laws of Association. — In language work the laws of association are essentially the same as in elementary reading. During the early stages in both these studies, form is the important thing. Consequently the association most employed is that of the "sign and the thing signified," the form with the substance which it clothes, the symbol with that which it symbolizes.

The law of similarity will be of constant service in fixing in memory the essential parts of all sentences, the order of these parts, the position of words in the sentence, and the few changes in the forms of words. The law of contrast will find occasional but not frequent use. The assimilation of new knowledge with that previously acquired, will demand constant attention in the study of language as in all other studies.

Laws applied to teaching Geography. — The first whole of the child, so far as the world is concerned, is that portion of it with which he can become acquainted through his senses. The preliminary work in geography, therefore, naturally begins with familiar, oral lessons upon the position of objects, upon direction, distance, and comparative size and extent. The schoolroom and the objects in the room afford the starting point. Lessons follow upon the school grounds, upon the immediate neighborhood, the school district, the

town or city. Ideas will thus be obtained of natural divisions of land and water, of rivers, lakes, hills, mountains, valleys, and plains; also, of boundaries, both natural and artificial, and of some of the simplest civil divisions. Miniature representations of these objects may be made upon the sand-table.

This local study will be made more or less extended according to the taste and judgment of the teacher, and according to surrounding conditions; some localities afford much more material for profitable study than others.

After this early preliminary work has been completed, the general laws of teaching indicate that instruction should begin with outlines upon maps and globes. The whole with which one commences may be an outline map, upon the blackboard, of a township, a county, a state, or any other selected unit, or it may be an outline of a continent.

The pupil, having become acquainted with the outline by actually drawing it, proceeds to fill in the details and particulars as minutely as may be desired.

As previously stated, it is not the purpose here to enter into extended methods of teaching particular branches of study, but merely to indicate and illustrate some of the applications of the general laws of mind and correlated laws of teaching. Having studied the laws it will be easy for intelligent instructors to make for themselves similar applications to all branches.

Association in Geography and History. — In geography and history things will be associated and assimilated, to a considerable extent, under the laws of similarity and contrast, but in geography the law of contiguity will be of especial service. Rivers are readily learned

and associated by following coast-lines; towns and cities are associated in the same way, or by following lines of travel along railroads and waterways. Real and imaginary journeys illustrate this law of grouping and associating. Industries are associated with the places where they are carried on; agricultural and other products with the localities which produce them. Persons, places, and events are associated together both in geography and history. In advanced teaching the law of cause and effect is of much value; causes are found for the location and growth of cities; for the rise and decline of states and nations, for the prominence now of one people, and now of another. The characters of men are associated with the conditions which fashioned them, and with their influence upon the age in which they lived and upon subsequent ages.

Cultivation of Memory. — Without further reference to particular branches of study, these illustrations are sufficient to indicate how memory is cultivated, and how knowledge is assimilated, associated, and made the permanent possession of the mind, and how subsequently it may be recalled and rendered available for practical service. Much teaching and many lessons amount to nothing because no proper use is made of the principles of association in the preparation and presentation of matters of instruction. All valuable training of the memory depends upon making such arrangement of the matter to be remembered, and upon producing such conditions, that the mind can act freely and vigorously according to its own natural laws. Artificial systems for cultivating and increasing the power of retention and reproduction have very little value.

Combination of Analysis and Synthesis. — The examples given are sufficient to suggest proper applications of the laws of presentation and instruction to methods of teaching the common branches of study. In many cases the processes of analysis and synthesis will be less distinctly marked than in the examples given. In some cases the two processes will appear in the same lesson, and even in the solution of a single problem, or in the investigation of a single proposition. There is no purely and exclusively analytic or synthetic method of teaching except in the domain of abstract theory.

Application to Higher Branches. — The applications of these laws to methods of instruction in some of the higher branches of study are less obvious. In many cases no complete general outline of the entire field of investigation can be made at the commencement of the work, though in almost all cases an approximation to such an outline is possible. In some departments progress is necessarily step by step, each advance adding a new fact, principle, law, or illustration. In such cases each individual fact, principle, or law, constitutes, for the time, a whole. And reference to consciousness shows that the mind holds itself in suspense and refuses to make any affirmation, to pronounce any definite judgment, until the subject-matter of study assumes, at least, an appearance of completeness.

Attitude of the Mind in Investigation. — This is the usual and proper attitude of the mind when examining unsettled questions, or exploring new fields whose boundaries are still indefinite and uncertain. It adopts and follows the method of investigation and discovery, which necessarily differs in some respects from the method of instruction to which the laws

more especially refer. In the one case the mind is reaching out into the unknown, and laying hold upon whatever it can find for examination. In the other case it is dealing with acknowledged facts and with ascertained truths and principles. In the one case it is laboring to make science; in the other to learn science already established and formulated. Naturally the methods employed for purposes so unlike will exhibit considerable differences.

IV. *Fourth Law of Mind: Law of Efficiency.*—The mind can receive only a limited amount of matter at one time, and, while subjects of study should be properly correlated, yet, in order to secure the most vigorous and productive activity, the mind must have some variety in subjects of study, and periods of relaxation and rest.

IV. *Fourth Law of Teaching: Law of Adaptation.* — The teacher should present only a properly limited amount of matter to the mind of a pupil at one time, and, while he should take care to secure proper correlation of studies, yet he should provide for sufficient variety in subjects of study and for periods of relaxation and rest.

Two extremes are to be avoided in the selection, arrangement, and presentation to an individual or to a class of matter for study. In either physical or mental movement time and energy are needlessly wasted by unnecessary and too frequent change of direction. On the other hand, movement over a uniform surface, in the same direction, and at an unvarying rate, results in great weariness and in lack of vivacity and interest. In bodily movement, a little up and down, an occasional turn to the right or left, a quicker or slower pace now and then, relieve the feeling of weariness, break up the

monotony, render effort more agreeable and less exhausting, and make progress generally more rapid. The ups and downs must not be too numerous, the turns must not be too frequent, and the changes must not be too abrupt or too violent.

Mental movements are subject to the same laws of fatigue and relief, of exhaustion and recovery, of pain and pleasure. Concentration of mental energy upon few subjects, and a good degree of uniformity of movement in one direction are absolutely necessary to the attainment of high excellency in any department of study. Courses of instruction should be constructed with reference to this admitted truth in order to avoid mental dissipation and waste of energy. At the same time it must be remembered that the demand of the mind for some variety is as imperative as that of the body. The mental highway should have some ups and downs and occasional turns to the right and left. This should be taken into account in the selection of subjects of study for a class, and in the arrangement of the program for daily recitations.

Length of Lessons. — In respect to the length of lessons in different branches of study no definite rules can be given. Only general suggestions can be made, but the matter is of such importance as to demand careful consideration on the part of all teachers. Generally young and inexperienced teachers assign longer lessons than older and more experienced ones. When possible, the matter of a lesson should have a good degree of completeness and unity, and should be susceptible of natural subdivision.

Some Things to be Considered. — Several things must be taken into account: (1) the general ability and

previous training of a class. Considerable differences are found in the average ability of different classes; (2) the nature of the study. Some studies require more time and thought than others; (3) the number of studies pursued by a class at the same time. A class with only two or three studies can take longer lessons than one with four or more; (4) the time given to a recitation. A recitation occupying thirty or forty minutes may properly cover more ground than one confined to fifteen or twenty minutes; (5) the method of teaching. Some so-called teachers merely hear recitations; others do some actual teaching. As a rule it requires more time to teach than it does simply to listen while pupils repeat what they have learned. It should be understood, both by teachers and scholars, that the number of pages of a text-book "gone over" is no certain criterion of the actual progress made by a class. A small amount of matter thoroughly mastered is worth more than twice the amount "skimmed over" and not half learned. Generally only one or two really important points should be included in a single lesson for young children. The concentration of attention, thought, and effort upon one thing at one time is the prime condition of fruitful study.

Assignment of Lessons. — Lessons should be assigned with great care, especially to young children. It is not sufficient to say, Take so many pages or so many paragraphs. The precise things to be learned should be pointed out, and all matters of special importance should be indicated. Children often waste much time in fruitless effort because they are not properly directed. It is safe to say that no teacher can assign a lesson wisely unless he has himself thoroughly and freshly prepared it.

Rest and Change Important. — The importance of relaxation and rest of mind can hardly be overestimated. The efficiency and productiveness of any form of mental activity depend very largely, indeed almost entirely, upon the freshness and vigor of the mind. Scholars sometimes estimate their merits as students by the number of times a lesson has been studied over, or by the number of hours occupied in so-called studying. One might as well estimate his merits as a traveller by the number of hours spent on the road. The prime factor both in study and travel is the rate of speed: and the rate must, in most cases, depend upon the freshness of the student or the traveller. The aim of every student should be to acquire the power to do a certain amount of mental labor in the shortest time in which it can be well done. The aim of the teacher should be to help the pupil in the acquisition of this power. He will do this most effectively by teaching him how to work, how to study, and how to secure relaxation and rest. We are here considering the resting.

Sleep. — (1) Perfect rest, either of body or mind, is found only in natural and profound sleep. Such sleep usually appears to be dreamless. So-called sleep, induced by drugs or other artificial means, lacks the curative and restorative power of natural sleep. It is now generally admitted that "brain-workers" need as much sleep as men engaged in hard manual labor. The average required, according to the best authorities, is about eight hours out of the twenty-four. A temporary gain may seem to be secured by reducing the hours of sleep, but the result in the end is usually a real loss.

Physical Exercises. — (2) Next to sleep, appropriate forms of physical exercise afford the best mental relaxation. Such exercises must be adapted to the age, to the condition of the body, to the previous habits of the individual, and to surrounding circumstances. The important consideration is that the form of exercise shall occupy the attention without severely taxing the mental powers.

In School. — In the primary school, lessons and physical exercise of some appropriate kind should alternate. Lessons should be short, full of energy and life, and so conducted as to command and absorb every thought and energy of the children. Equally absorbing periods of physical exercise should follow. In more advanced grades light gymnastics, calisthenics, and other forms of exercise should be introduced as much as circumstances will permit.

Alternation of Studies. — (3) In all grades, but especially in the high school, mental relaxation and relief must be obtained by suitable alternation of studies. Provision must be made for such alternation in the program of recitations and other exercises. Opportunity should be given, as far as possible, for the exercise in turn of the three modes of mental activity, the perceptive, the representative, and the thinking.

Order of Recitations. — Keeping in view the mental activities exercised by the different branches of study, it will be easy to provide for the necessary alternations of psychical action. The order in a program may be greatly varied. It may be reading, arithmetic, grammar; or mathematics, science, language, as geometry, zoölogy or botany, Latin or literature, or any one of several other possible arrangements. As a rule, studies

which demand vigorous and protracted thinking, and very close and accurate analysis should be placed in the early part of the day; and those lessons which require only a moderate degree of mental exertion, and allow considerable exercise of body, should be placed near the close of the day. Yet the difficult and the easy, the heavy and the light, should be interspersed, to some extent, throughout the entire program.

FOR READING.

Hamilton's Lectures on Metaphysics, lecture vi. and lecture xxxvi., last part.

Bain's Education as a Science, chapter iii., first part.

Lange's Apperception, Part II., section 3.

McMurry's General Method, chapters iv. and viii.

Laurie's Institutes of Education, lecture vi.

Fitch's Lectures on Education, lecture v.

Rein's Outlines of Pedagogics, Part II., Theory of Instruction.

McLellan's Applied Psychology, chapter iv.

White's Pedagogy; topic, Methods of Teaching.

Compayre's Lectures on Teaching, Part I., chapter viii., and Part II., chapter i.

Morgan's Studies in Pedagogy, chapter xiii., Methodology.

CHAPTER VIII.

SUBORDINATE OR SPECIAL LAWS OF MIND AND OF TEACHING.

Special Modes of Mental Activity. — As previously stated, each period of development has some modes of psychical activity in a large degree peculiar to itself. These forms of mental action appear, indeed, at all periods, but they do not exhibit the same relative degree of prominence and vigor.

Statements of these forms of activity give what may be called subordinate or special laws of mind; and inferences from these laws of mind afford subordinate or special laws of teaching. These special laws of teaching include the substance of many of the so-called "educational maxims," some of which are borrowed without credit from Comenius. Harm has been done, in some cases, by elevating these maxims to the rank of universal or general truths. They render valuable service when their meaning is clearly understood and their applications properly limited.

In this chapter attention is confined mainly to modes of psychical activity which manifest themselves continually and with peculiar energy in the period of childhood. The supreme importance of correct interpretations of the movements of the child's mind and,

consequently, the importance of good elementary teaching, will be a sufficient justification of such limitation.

Correlated Laws. — As a matter of convenience, and also as an aid to the memory, several of these laws, both of mind and of teaching, are here presented in two correlated parts, one part referring to an *earlier*, the other to a little *later* period of mental development.

Special Laws of Mind.

First Law. (*a*) In his early learning the child must begin with the concrete, — that is, with objects, acts, and qualities; these cause the production of ideas; words are then needed as signs to name and describe the objects and ideas. The order is: (1) objects, (2) ideas, (3) words.

(*b*) A little later, when words and the things which they signify have become thoroughly associated, the learner begins, in many cases, with words, as the signs of things and ideas. These cause the production in the mind of pictures, images, ideas (concepts), of whatever the words signify. This state of mind is naturally followed by effort to express and describe properly these images and ideas (concepts).

Special Laws of Teaching.

First Law. (*a*) In teaching young children the teacher should begin with the concrete, — that is, with objects, acts, and qualities; should excite curiosity and help the production of ideas; should then teach words, as signs, to name and describe the objects and ideas.

(*b*) At a little later period, when words and the things which they signify have become thoroughly associated, the teacher should begin, in many cases, with words, and through these secure the formation of correct mental pictures, images, or ideas (concepts), of whatever the words signify; and should then guide and aid the pupil in the proper expression or description of these images and ideas (concepts).

To this period such maxims as the following apply: "From the concrete to the abstract;" "Things before words," — the second maxim should be amended to read, "Things and words;" "Sense knowledge before thought knowledge;" and others of similar character.

The Concrete of the Child. — To this period object-teaching and objective teaching belong, although the teaching even at this time should not be addressed exclusively to the senses. "The child's world is not a world of abstractions, but one of concrete objects. Even the idea of succession in time, of growth and development, comes to the child only in its most tangible and concrete form, by the changes which he observes to come over the objects he is interested in, changes which he often produces himself with his own hands. It is true the growth of his faculties is a continuous one, and the germs of all faculties develop simultaneously; but they do not all develop at the same rate, and at different periods of the child's mental evolution the mental powers that occupy the foreground are not always the same. It is true that very early in life traces can be found of imagination and of reasoning processes, side by side with the operation of perception." Teaching must take account of this fact and must, while largely and mainly addressed to the perceptive powers, make provision for the proper exercise of the slowly developing representative and thinking activities.

It should be remembered, however, that the concrete of the child does not consist of the few objects brought before him for the somewhat formal lessons of the school-room. His concrete is his whole environment; not alone the objects in the school-room, not the school

itself with all its complexity, not the teacher and his fellow-pupils, but everything that touches his senses or appeals to his sensibilities. From this environment come, first of all, his sensations; from these his percepts; from these, by suggestion though the native impulse of curiosity, come all his early ideas and his early thinking.

It is evident enough that the material of instruction for the first years of school life should be selected from the child's immediate surroundings. It does not matter much what name is given to this material. It may be called "elementary science" or whatever one prefers, provided only the thing itself is secured. Such selection of material enables the school and the teacher to meet the child on familiar ground. He is prepared to apperceive or assimilate the subject-matter presented to him. The school is not a new and unknown world, but rather a continuation of the world in which he has been living.

Lange. — "In and about the home the child has acquired all the ideas he brings to school; here dwell the objects of his perceptions; here are found the beginnings of his notions and feelings. It is therefore self-evident that the instruction which is to elaborate and supplement this material should start with the same sphere of experiences, or, in other words, deal with the surroundings of the child. Because we know that the child on entering school has fully mastered only a limited part of his surroundings, and that many of his home observations need clearing up and sifting, we lead him back into the old familiar world, in which he has heretofore lived, and which is clear to him. We teach him to know it better and to make him more familiar with it, — we develop a knowledge of the home environment.

"The home comprises more than the piece of earth where we were born and brought up; it includes also the products of the soil, the plant and animal life, the inhabitants with their occupations and customs; so through careful observation of home objects and incidents, our instruction is to secure vivid sense-perceptions for more than one realm of knowledge. Geography, history, and natural science owe to it the most important elementary ideas; and similarly geometry, arithmetic, instruction in the mother-tongue and in drawing, relate to numerous inner and outer experiences of the child as they come to him in his intercourse with things and people at home. These home-observation lessons, furthermore, should deal only with such things as belong to the personal experiences of the child, which he can really observe with his own eyes and ears; whatever things lie beyond the horizon of home, — if ever so interesting, — as, for instance, strange animals and plants, as long as they cannot be observed at home or explained through visible home-objects, are absolutely to be excluded."

To these object-lessons as centres, supplying the material and substance of thought, instruction in the so-called form studies, such as reading, writing, drawing, and language, may to a considerable extent be limited. The universal law of progress in the proper development of childhood and in the acquisition of mental power is, first, thought, then expression. Expression may take various forms. Facility and accuracy in the use of these forms can be acquired only by practice. Hence comes the absolute necessity of considerable special drill or training in such studies as reading, writing, and drawing, in the primary grades. Such training can be secured, however, without the wearisome repetition of mere unmeaning sounds and forms.

These object or science lessons are especially valuable for *developing and training the activity of the senses, and for creating the habit of observing.* No power of the mind is developed and trained except by fitting exercise. In order to secure such exercise, means and opportunities must be supplied. The senses can be trained only by giving them something to do. The eye learns to see by seeing; the ear by hearing; and the other senses become skilful in their peculiar work by doing it. The same law holds true in all manual training. But proper instruction and direction are necessary in all cases. Both the senses and the hands need to be guided. It is the teacher's business to give the proper instruction, direction, and guidance. So much being granted, the maxim of Comenius is true: "*Let things that have to be done be learned by doing them.*"

Bad Object-Lessons. — Object-lessons may be so conducted as to be worse than useless. This is the case when children are required to learn and repeat, in a mechanical way, long lists of names of parts, qualities, characteristics, and uses of objects, all of which they know before entering school. So far from cultivating and quickening the activity of the senses, this method of teaching really tends to produce "artificial stupidity;" the senses are dulled by it.

Children must use their own Senses. — Children must be allowed to see, hear, taste, smell, and touch for themselves, and not be taught simply to repeat what the teacher sees and hears. But they should be so directed that they will learn to observe *with order, regularity, accuracy, and finally with rapidity.* Beginning with objects of which the children have some general but indefinite knowledge, the genuine teacher will

lead her pupils to discover for themselves parts, qualities, characteristics, and other peculiarities which have hitherto entirely escaped their hasty and careless notice. An old object is thus transformed into a new one, and invested with a species of enchantment. The commonplace world, in which the children have been living, is suddenly changed into a world of wonders, marvels, and charms at the skilful touch of an inspiring teacher. The value of this work does not consist in the little knowledge gained by the pupils, but in the acquired *power of perceiving*, and in the acquired *habit of accurate and rapid observation.*

Final Result. — The final result is that the child comes to observe almost or quite unconsciously; he sees and hears without effort, and thus acquires a vast amount of useful and interesting knowledge with no expenditure of time or labor, and with positive and constantly increasing pleasure. *This is the development and training of the perceptive powers;* the opening of the gate-ways of the soul; the bringing of the mind and of the material of knowledge face to face, which constitutes, as previously stated, real teaching. This is Mr. Page's "waking up the mind."

Some Questions on Observation. — How many young people, even teachers, who have lived all their lives in the country, surrounded with trees, fruits, and flowers, can draw or describe the forms of the leaves of the different kinds of trees; can tell the names of the common flowers by the roadside; or how many petals the apple or pear blossom has; or what the uses of the corn tassels are; or how new varieties of potatoes are produced?

Examples of Concrete Lessons. — Concrete teaching may

be extended with great profit and interest far beyond the use of simple objects in giving first lessons in numbers. Children are fond of concrete examples in arithmetic. A class may be set to measuring the floor of the school-room and to determining the number of square feet in it; the same may be done in respect to the sides and ceiling of the room. The number of cubic feet contained in the room may be calculated, and the number of cubic feet for each scholar. These and similar problems have an interest for pupils which mere abstract questions do not possess.

More Examples. — At different seasons of the year questions relating to familiar matters may be suggested. For example, pupils a little advanced in arithmetic may be asked to determine the number of stalks of wheat on an acre of ground, being instructed to count the stalks on a few square feet in different parts of the field so as to ascertain the average number on one square foot. In the same way the number of hills of corn on an acre may be calculated, or the number of forest trees on a certain number of acres. Such examples may be multiplied almost indefinitely in a farming district. In a lumber region a different class of examples would naturally be devised, and in a mining section still a different sort, and so on, the particular examples being varied according to conditions and surroundings.

Spelling-Lessons. — Lessons in spelling may frequently be made from objects, by taking the name of an object, the names of the parts, words denoting the uses of the object, and other words suggested by the object or associated with it. Such lessons may be made lessons in language as well as in spelling.

Second Part of these Laws. — The second part of these

laws refers to the work of the secondary stage of learning and teaching. However, it must always be kept in mind that *the transition of the child from one period to the next is very gradual.* Consequently the method of teaching must be changed very gradually. Little by little the object and objective methods must give place to methods which address the conceptive or representative powers more directly. Pupils are now prepared to use books; and the order of progress is: (1) words, (2) ideas, and (3) expression; while in the first period the order was: (1) objects, (2) ideas, and (3) words.

The Order in Reading. — The order is illustrated by the lessons in reading after the children begin the use of the reading-book. The printed words, as the pupils look upon the page, cause the production in the mind of images, pictures, ideas, representations of the objects, acts, persons, and so on, of which the words are signs or symbols. These mental ideas, images, and pictures are expressed or described in the vocal reading by the tones, inflections, and emphasis employed by the readers. The character of the reading will show whether the representations in the mind are correct and distinct. *A book cannot be used with advantage until such representations can be readily and accurately formed.*

Order in Language-Lessons. — This order is also observed in language-lessons when the teacher reads or relates some story and requires members of the class to reproduce the substance of it, in their own language, either orally or by writing. In this case the teacher's spoken words cause the formation of mental representations or concepts, which are expressed or de-

scribed by the pupils in words or signs of their own selection.

Different Modes of Expression. — As already stated, expression may take various forms. It may be by spoken words, by written words, by marks or signs of various kinds, as in arithmetic and algebra, by drawing and painting, or by expressive gestures and movements. The form of expression is determined by the nature of the idea, by the purpose in view, and by the degree of development and training of the pupil.

Representation begins early. — This process of mental representation begins at a very early period of the child's development, and *the power to form correct and clear ideas, when words or other signs are used, should be cultivated as carefully and diligently as the perceptive powers when objects are employed.* It is possible to use the object and objective methods of instruction too long. The child in that case becomes accustomed to depend too much upon perception for his mental notions. The power to form mental pictures from words is not called into activity, and consequently is not developed. The result is that memory, conception, and imagination are retarded in their growth, and sometimes permanent injury is inflicted upon the mind. Care should be taken also in all lessons, at this time as well as in later periods, that new matter of instruction, new ideas, become assimilated and united as far as possible, with previously acquired ideas, so that the child's knowledge shall form a properly related whole. Such assimilation or apperception will, of necessity, be less complete in the mind of the young child than in a mind more fully developed, but it should be made as complete as the degree of evolution will permit.

Second Law of Mind.

(*a*) The young child proceeds in its early learning, for the most part, inductively; that is, from individuals to classes, and from particular cases and examples to general probable truths and principles.

(*b*) A little later the learner proceeds, in many cases, deductively; that is, from classes to individuals, and from general truths and principles to particular cases and examples.

Second Law of Teaching.

(*a*) The teacher of young children should proceed for the most past inductively; that is, from individuals to classes, and from particular cases and examples to general truths and principles.

(*b*) As pupils advance, the teacher should, in many cases, proceed deductively; that is, from classes to individuals, and from general truths and principles to particular cases and examples.

For the purpose of emphasizing certain points of special importance a third law is added, although it is virtually included in the second, and will be discussed in connection with that law.

Third Law of Mind.

(*a*) The young child naturally seeks to learn facts, events, processes, examples, and so on, before he is interested in studying causes, reasons, consequences, rules, definitions, and principles; and he learns language before the laws of language, that is, before grammar.

(*b*) After the thinking and reasoning powers have be-

Third Law of Teaching.

(*a*) The teacher should present facts, events, processes, examples, and so on, to young children before requiring them to study causes, reasons, consequences, rules, definitions, and principles; and should teach language before the laws of language, that is, before grammar.

(*b*) In giving instruction to advanced scholars the

come considerably developed, the student naturally seeks to commence the study of many subjects with statements of rules, definitions, principles, and hypotheses, and then goes on to investigate and discover the applications of these. He also commences the study of new languages by applying, as far as possible, the laws and principles of languages already learned, that is, with grammar.

teacher may often begin with statements of rules, definitions, principles, and hypotheses, and then proceed to investigate, explain, and illustrate the various applications of these, and the inferences and deductions from them. He should also commence instruction in new languages by applying, as far as possible, the laws and principles of languages which the pupil knows, that is, with grammar.

Individual Notions. — The early notions of the child are all of individuals, individual objects, individual acts, individual qualities and characteristics, individual processes and relations. He has no ideas of classes of objects or of general truths and laws. The senses through which the beginnings of all his knowledge are obtained, can make him acquainted only with individual things. The child sees this particular cat, hears the voice of this particular woman, smells the odor of this single rose, and tastes the flavor of this particular peach. But of cats as a class, or of women in general, or of roses as a family, or of peaches as a variety of fruit, he has no conception. It is true he uses general terms, such as boy, dog, horse, book, flower, but, for considerable time, he employs these only as names of individuals.

Notions of individual objects and acts can be mentally imaged or pictured, but ideas of classes and of general laws are pure psychical creations, which are often exceedingly obscure and ill-defined in the minds

of adults. Though in many cases occasioned by sense-perception, they have no basis in sensation, out of which all early mental life springs.

Many of the percepts of the child are very complex, involving the combined activity of several of the senses. For example, the percept of an orange involves the activity of sight, touch, smell, and taste; but this complexity does not trouble or perplex the child, since he grasps, at first, only the notion of the intermingled whole; or if he considers by itself, as doubtless he frequently does, the partial percept given him by some single sense, he has yet no disposition to inquire as to the union of partial percepts to form the complete and perfect notion of an object.

This characteristic of child nature, in the early stage of development, to form only individual notions is not confined, as we sometimes suppose, to ideas of real objects. It extends to acts, processes, relations, indeed as far as the child's mental activity extends. A child directed to perform a certain act at this time and in this place, performs it, but understands the command to apply only to this particular act at this specific time and in this particular place. The prohibition of some particular act is subject to the same limitation in the child's mind. The prohibition appears to him to have reference only to this immediate time and this specific place. Through ignorance of this peculiarity of the undeveloped mind, parents and teachers frequently misinterpret the conduct of children in neglecting required acts and in performing forbidden ones, attributing to heedlessness or perversity that which comes from the natural and spontaneous activity of the mind at this stage of evolution. A little later, perversity may be

responsible for the child's conduct, but not in the earliest period.

Without doubt the notion of relation is, at first, limited in the same way. This part of this particular object may be half the size of this whole object, but that the same relation extends to similar parts of all objects is not immediately comprehended.

Ideas of general laws, like the law of the regular and constant increase in the value of figures from right to left, or the law of gravitation, must be more difficult and slower of formation, since they are more intangible and abstract in their nature.

First Step in Education. — The first step in the education of the child consists in the development of the psychical power to form clear and accurate notions of individual objects, acts, facts, processes, character, and conduct.

Formation of General Notions. — The period during which the child is *exclusively* occupied in the formation of individual notions is very brief. While the mind, of necessity, begins with such ideas, it passes by a spontaneous impulse, and without instruction, from notions of individuals to notions of classes, and from specific cases and examples to general truths and laws. For considerable time, however, after entering school, every new subject must be approached by beginning with individual and specific notions and proceeding gradually, but often with a good degree of rapidity, to its more general aspects.

First Ideas of Classes. — The child's earliest notions of classes are probably reached by a process of hardly conscious elimination; that is, by putting aside or out of view, one by one, characteristics which are discovered

to belong only to single individuals, and by retaining and combining the characteristics which are found to be common to a considerable number of individuals. For illustration, suppose a child sees an apple for the first time, and that this particular apple is red. The word "apple" now means to the child only this one red apple. Suppose to-morrow a yellow apple is brought to the child, and afterwards a green apple, and then others of variegated colors. Gradually the notion of any particular color is eliminated from the idea expressed by the general term "apple." By a similar process the notion of any particular size, or of any specific taste will be removed, and only a few characteristics will remain included in the idea or general notion of apple.

Induction. — The process by which the mind reaches the notions of classes, of general rules, laws, and truths by the examination of a considerable number of individual things, examples, or cases, is called induction.

The formation of general notions involves much more than simple perception; it requires comparison, which involves the activity of judgment, and reflection, which is, in its nature, continuous thinking. General notions are embodied and expressed in the form of definitions, laws, or rules.

Examples of Induction. — The process by which a child reaches a general truth may be easily illustrated by reference to some of the things with which children are supposed to be well acquainted.

Ask a child how many petals an apple blossom has; he will examine a few blossoms, plucked from half a dozen different trees, and answer without hesitation, "Five." Inquire how many seed-cells the apple has, and he will arrive at his conclusion by the same method

In all such cases, children reason correctly, although the process is probably almost unconscious. In school they will frequently need to be guarded against the danger of drawing conclusions too hastily and from an examination of an insufficient number of individuals.

In the study of language a number of selections may be written and a rule for the construction of all similar sentences may be inferred from these. Illustrations of this natural inductive process may be readily selected from all the various branches of study.

Road from the Particular to the General. — So long as the mind deals only with notions of individuals it is filled with separate and unrelated elements and material of knowledge. There can be no orderly arrangement of the mind's acquisitions, no classification and assimilation. Classification presupposes a basis upon which classes are built up, a pattern or ideal with which things can be compared, a law to which individuals must conform. Such bases, patterns, and laws are always general notions. It will be observed that induction is the road along which the mind passes in going from the individual to the general notion and consequently is the necessary preliminary and introductory process in the acquisition of knowledge. It is the process or method of investigation and discovery, not the method by which knowledge is put into permanent form and united into a properly related whole.

Deduction. — The mind, having reached by induction notions of classes and of general laws, spontaneously changes the direction of its movement and proceeds to apply these laws to new individual cases, and to make its concepts of classes centres around which to group a multitude of new individual objects; in other words, it

proceeds, by a necessity of its nature, to apperceive, to assimilate and classify every new acquisition. This process of applying general rules, definitions, and principles to particular objects and cases is called deduction.

Induction and Deduction Complements each of the other. — Both induction and deduction are constantly employed in the processes of learning and teaching. They are the natural complements of each other. Neither can be employed exclusively in any grade of school work for any length of time. No method of teaching is exclusively and purely inductive or deductive. Frequently both are used in the same lesson, induction being first employed to reach some general rule or law, and then deduction in applying this rule or law to new cases and examples.

Illustrations. — For illustration, as soon as a pupil has become thoroughly acquainted with the processes of addition, subtraction, multiplication, and division, he has only to apply this knowledge to the solution of any new problem given to him. The inductive processes are no longer necessary. The same is true in the study of language, and indeed in all studies.

The deductive method is especially employed in all branches where the work is largely classification, as in botany and zoölogy. The characteristics of great families or classes are first learned, and these characteristics are then used in determining what individual plants, flowers, or animals are, and where they belong in the vegetable or animal kingdom.

The Third Law. — The third law is given for the purpose of emphasizing some points really involved, as previously stated, in the second. This law implies that considerable raw material of knowledge may very prop-

erly be accumulated by the young child which is only partially understood at the time of reception, and which cannot be thoroughly assimilated and classified at that period.

It is hastily assumed by some that sound pedagogy forbids the teacher to encourage this process of accumulation. It is readily conceded that it may be carried to a harmful extent, and may result in the cultivation of a verbal memory overloaded with isolated and disconnected facts. Such an accumulation of unrelated matter hinders mental digestion, and tends to the production of mental dyspepsia. This was a prominent fault of the so-called old education.

But memory, even in its least scientific form, has its own place and its own legitimate function, and its value should not be underestimated. A power of the mind should not be ignored because it has been abused.

Early Processes Imperfect. — The truth must be recognized that the processes of assimilation and classification as performed by the young child are, of necessity, crude and imperfect. He must classify by principles and relations which he can understand, and not by the more profound principles and the less obvious but more essential relations which only the mature mind can comprehend. The assimilation should be as perfect as his stage of development will enable him to make, but at this period it is unwise to attempt to teach children reasons, explanations, and principles which can have no real meaning to them, and to require them to repeat formulas in arithmetic and rules in grammar which are merely words without content. The energy of the child should be employed in doing that which he can do with the most satisfaction and with the greatest

advantage. It will be borne in mind that, at every stage of development, the acquisition of power, with the skill to use this power, is of more importance than the acquisition of what is by courtesy called knowledge.

Work in some Studies. — During this elementary period the pupil, having reached by induction many probable truths, having become familiar with processes and methods of working in arithmetic, enjoys "doing" examples of various kinds, although he may not now comprehend the principles out of which he will discover, at a later period, that important general laws may be drawn.

He will accumulate many "facts" concerning common things, natural objects, elementary science, animals, plants, flowers, and fruits, the full meanings and relations of which can be comprehended only when the thinking activities have become more completely developed.

The beginnings of the study of biography and history will be profitably made by hearing, reading, and reproducing stories and anecdotes which have, in his mind, no essential connection one with another, and which are taught and learned simply because they are "interesting" at this stage of the child's psychical evolution. Nevertheless they constitute valuable material for use at a later period, and are readily retained by the memory, although very imperfectly assimilated into any compacted body of knowledge.

Moral instruction will proceed in a similar way by the use of unrelated but wisely selected fairy tales, fables, and stories of real life; which indeed teach lessons of character and conduct, but which the child listens to, learns, and enjoys chiefly because they gratify his native curiosity, and appeal strongly to the develop-

ing power of imagination and fancy. This material means something to the child now, much in truth if presented by a sympathetic and skilful teacher acquainted with the inner springs of the mental and moral life of childhood; but its full richness of meaning will be comprehended only in later stages of psychical progress. Complete assimilation cannot yet take place, but will follow in due season.

In connection with all other studies and exercises instruction in language should, during this period, be constantly and carefully given without reference to formal grammatical laws. The pupil, however, will, of necessity, formulate for himself some simple laws of language as a result of the natural process of induction; and it would be worse than folly to refuse to help the child to profit by the almost instinctive movements of his own mind, even though these bring us into conflict with some favorite educational theories and maxims.

Imitation. — At this stage of development the imitative impulse is peculiarly active in all directions. The child's words and forms of expression are determined mainly by the language which he hears in the home and at the school. The tenacity with which forms of expression learned in early childhood cling to the lips and fasten themselves in the memory, in spite of the influence of later instruction and practice, renders it of the highest importance that the primary teacher give the child the best possible assistance towards the formation of correct habits of speech. Next to the training of the senses and of the growing power of assimilation, this is the peculiar work of the elementary school. In the preceding chapter some suggestions were made in respect to the application of the general

laws of mind to the teaching of lessons in language. A few suggestions in relation to the very earliest instruction in language are added here.

Suggestions. — (1) *First of all, the teacher's language should be good, grammatically correct, and worthy of imitation.* This is of vital importance. The teacher's conversations with the children, her remarks to classes and to the school, are so many continuous lessons in language; they are more effective than all other lessons.

(2) Next to this in importance is *the correction of any bad habits of speech which the children may have already acquired.* This should be done in such a way as not to wound their sensibilities, or to give the impression that the teacher takes pleasure in criticising them.

(3) In recitations and all formal school exercises *be sure that a child has clear and distinct ideas before he tries to express them.* The expression of an idea or thought can never, unless by some mere chance, be clearer and more distinct than the idea or thought as represented in the mind. Confusion of language necessarily follows confusion of thought. An object seen indistinctly can be described only vaguely. A child should not be allowed to describe an object of perception until he has observed it so fully and carefully that he knows exactly what he wishes and intends to say. The same requirement should be made when questions are put which call for the mental act of representation. This requirement will interfere a little at first with the liveliness of a recitation or other exercises, but in the end progress will be more rapid.

Imperfect Representation and its Causes. — During the early period of the representative stage of a child's school life there is great danger of confusion of ideas

in his mind, and of consequent incorrectness in the use of words. A story is told, or a narrative is read, and the pupil is required to reproduce the story or the narrative in his own language. Failure in the reproduction may result from the fact that the language used in telling the story is not understood by the child. In this case the pupil can form no mental pictures, because the words suggest nothing. Consequently he has nothing to reproduce.

Failure to reproduce may have another cause. The pupil may understand the language employed and may form correct ideas, but his vocabulary, aside from the words used by the teacher in telling the story, may be so limited that he is unable to express these ideas correctly in other words of his own selection.

(4) Consequently at this stage of school life a teacher should take great care *that right words be taught to children as they are needed by them.* Every new object or idea calls for a new word. The word will be easily remembered if it is taught in connection with that of which it is the sign; the natural order is "*things and words.*"

Words to be Taught. — The words taught to young children should be short, plain, every-day words, readily understood and easy of utterance. Train scholars to use just enough words to express their ideas clearly and fully, but no more than are needed to do this. In this matter the teacher should afford an example worthy of imitation. Do not fall into the habit of "talking much and saying little."

Technical Terms. — The general rule as to the selection of short, simple, every-day words for the use of children, should not be pressed to an unreasonable extreme. It

is not necessary, nor is it desirable, to avoid the use of technical terms in early instruction. Such terms should not be employed unnecessarily, or too freely, but there is no sufficient reason for excluding them entirely. Oral and all early teaching should prepare pupils to use text-books. Some previous knowledge of books will help the pupil greatly when he commences to use them.

(5) *Finally, give young children much practice in the use of correct forms of expression.*

The End to be Reached. — The end desired is the formation of a habit of employing good language. Habit is formed only by long-continued practice. Sentences properly arranged must be spoken over and over again, must be written repeatedly, until the sounds and forms become so familiar that the tongue utters them and the fingers write them almost automatically. Training in this matter should begin in the lowest classes and should be continued systematically through all the primary grades.

FOR READING.

Compayré's Lectures on Teaching, Part I., chapter iv.

Bain's Education as a Science, chapter vi., first part of chapter vii., and on the Object-Lesson.

Rooper's Pot of Green Feathers.

McMurry's General Method, chapter vi.

Lange's Apperception, section 3 of Part I., and section 2 of Part II.

De Garmo's Essentials of Method, Part I.

Fitch's Lectures on Teaching, lectures vii. and xiv.

Laurie's Institutes of Education, lecture vii.

Wiltsie's Place of the Story in Early Education.

Arnold's Waymarks for Teachers; topic, Examples of Lessons.

CHAPTER IX.

THE RECITATION, OR THE TEACHER IN THE CLASS.

The Teacher's Real Work. — The organization and government of a school are necessary and important parts of the teacher's duties. These require much of sound judgment, of wise discretion, of ready tact, and frequently of patience and self-control. But primarily and chiefly the teacher is an instructor, using the term in a very broad sense; his special and most effective work is performed in connection with the class; his previous preparation, his study of subjects and methods, his observation and practice, have all had reference mainly to this.

Face to Face. — Here as nowhere else the teacher and the learner meet face to face; mind comes into direct contact with mind, heart with heart, disposition with disposition. Whatever of ability, power, and skill the teacher possesses finds here an open field and ample room for most vigorous exercise. If the personality of the teacher is marked and positive, it counts for more than any number of mechanical devices or than elaborately contrived machinery.

Things to be Considered. — It is not easy to describe briefly and adequately the nature of class-work, or to give minute and detailed directions for its performance. Such minute directions, indeed, are often productive of

more harm than benefit: they tend to embarrass the teacher, to restrain freedom of action, and to destroy all true spontaneity and individuality; they become fetters and clogs, impeding and hindering, rather than aiding and assisting. If the best results are to be secured, sufficient room must be left for the proper play of the individuality and personality of the teacher.

Regard must also be had to the circumstances in which the teacher is placed, to the conditions under which he is acting, to the grade or class in which the work is to be done, to the previous training of pupils, to the habits of mental action which they have acquired, and to the means and appliances of instruction and illustration at hand. Schools, classes, and pupils have their peculiarities, as well as teachers, and these must be taken into account in determining methods of procedure in many cases.

The Best Thing. — Keeping in mind these and other limiting conditions, it is obvious that the best which can be done for teachers generally, in regard to class-work, is to call attention to some principles of universal application, and to make some suggestions in relation to what may be called the mechanism of class-management.

Purposes of Class-Work. — Before considering how a task may be performed to the best advantage of all concerned, it is of prime importance to have a definite and adequate notion of what is to be done. Much time is lost and much energy is wasted for lack of this.

It is customary to apply the term "recitation" to the work of the class-period. The word is unfortunate, but it has come down to us from the times when the class-exercises consisted almost exclusively of the repe

tition by the pupils, in the language of the book, of what they had memorized. Children were required and expected to "say the lesson." They recited, and that was all. Gradually the practice has been undergoing modifications. The word also, though retaining its old form, has enlarged its content, and embraces now ideas of teaching and instruction as well as those of memorizing and repetition. For the sake of brevity, it may still be used without risk of misunderstanding.

Two Leading Purposes. — The main purposes of the recitation are reducible to two, — instruction and testing on the part of the teacher, learning and reciting on the part of the pupil. The processes of instructing, learning, testing, and reciting, in many cases, go on together; in some cases they may be, to a considerable extent, separated.

In Primary Grades. — In the lowest primary grades, the recitation period is occupied by the teacher mainly in giving instruction, and by pupils in learning. The teacher is aiding the class in getting knowledge, directing and guiding in investigation and research. Testing is a secondary matter, and occupies but little time; it is necessarily included in the processes of instruction.

In Higher Grades. — In the higher grades it is practicable to separate the processes of teaching and testing to a considerable extent, though never completely below the high school. The recitation of a pupil reveals the imperfection of his knowledge; instruction is most valuable and effective at this time and place. No theory concerning the separation of processes, or plans for estimating the value of a pupil's work, should be allowed to prevent the teacher from doing what the best interests of the scholar demand. These remarks are intended to

apply to the usual recitation, and not to special exercises when testing is the sole object.

In Advanced Classes. — In the high school and in higher institutions, the processes of instruction and examination may become almost completely separated. Some recitation periods are occupied entirely with instruction and learning; others, with testing and reciting. Methods of testing are not considered at this point, but they must be varied according to the degree of advancement of classes and the nature of studies.

Testing by "Drill." — Drill, so-called, serves two important purposes, — it affords a test of the ability of the pupil to apply principles and rules, and it also aids in the acquisition of facility and skill, both mental and manual, in the performances of processes. Drill loses much of its value when it consists simply in "working," in the class, examples in arithmetic previously wrought, or in the analysis of sentences previously analyzed, or in the mere repetition of any processes previously performed. The training or drill should be upon new problems, or upon new sentences which require the application of principles or rules supposed to have been mastered by the solution of problems given in the textbook. In this case there is a testing of acquired power, and of practical skill in the use of what has been learned. Particular devices for securing the best results from class-training should be varied according to conditions, the nature of subjects, and the means at hand.

Some Conditions of Successful Class-work. — The most essential conditions of successful recitation-work may be summed up very briefly. They are partly fundamental, the same always and everywhere, involved in the very nature of the work; and partly mechanical,

varying with times, places, and circumstances, not involving any general principles of mind or conduct.

(1) *A Definite Purpose.* — Every lesson has, or should have, some definite purpose in the mind of the teacher. One lesson may be merely preparatory to others which are to follow. It involves some principles, laws, or facts, upon the right understanding of which, the ease or difficulty of the pupil's progress very largely depends. Not knowing the relation of these things to succeeding lessons, the student cannot appreciate their importance. It will be the purpose to fix such principles and facts so thoroughly in the minds of the class that they cannot be forgotten.

Another lesson may consist in reality, though not in specific form, of a summing up of results, of conclusions or inferences, from several previous lessons. The purpose will be to fasten these conclusions, and to make clear that they are legitimate inferences from what has gone before.

Illustrations might easily be multiplied, but it will be sufficient to say that no lesson can be well taught, even in the very lowest grades, unless there is in the mind of the teacher a specific end to be attained, — an end toward which every movement is directed. All examples, explanations, and illustrations, are selected and employed with reference to this purpose.

(2) *Careful and Fresh Preparation.* — It is presupposed that every teacher has, before commencing his work, made a general preparation in all the branches which he expects to teach. No person can give good instruction in a subject by studying it, for the first time, from day to day, so as merely to keep a little in advance of his class. In this case, the teacher has no knowledge

of the relation of one part of the subject, or of one topic, to another, and consequently cannot wisely direct the work of pupils. Unimportant matters may be emphasized, and important ones may be passed over, with little attention. It is not this general preparation to which reference is here made, but specific and special preparation of each daily lesson. The subject to be presented must be brought fresh into mind, even though it may have been taught scores of times. No one can teach the same topics over and over in precisely the same way, term after term and year after year, and preserve either his own interest or the interest of his pupils. The subject, though old, must be made new by fresh illustrations, by new examples and explanations, by varied forms of presentation and treatment. This can be secured only by preparation made freshly for this time and this class. The capacities, tastes, habits, and needs of different classes are very different, and the immediate preparation should have reference to the present class and to existing conditions.

(3) *Assignment of Lessons.* — The assignment of subsequent lessons is frequently an important part of the work of the recitation-hour. Definite rules cannot be given for this, since much will depend upon the nature of the study, and much upon the character of the class. In many cases the assignment of the lesson is an essential part of the instruction, and considerable time may profitably be occupied in doing it. The vital points in the subject are indicated, the direction of investigation is pointed out, references for reading are named, and sometimes, but not always, the end to be attained is stated. The lesson cannot be wisely assigned until the fresh preparation has been made by the teacher. No

more work should be assigned than pupils may reasonably be expected to prepare within the time at their command. The practice of "giving lessons over again" is a sure way of creating the habit of making imperfect preparation on the part of some members of a class.

Attention on the Part of the Class. — On account of its great importance, the general subject of attention receives special consideration in another place. Consequently the laws governing attention, and the means of securing and retaining it, will not be discussed at length here. It is sufficient to say that good instruction, combined with genuine enthusiasm in the teacher, will usually command a good degree of attention from the pupils.

Proper mechanical arrangements and devices in relation to coming to and going from recitation, in relation to seating, to positions in sitting and standing, in relation to the place which the teacher occupies so that all members of the class shall be under his immediate observation, will be of temporary service; but all these have little permanent value unless they are determined by some law of mind and meet some demand of human nature.

In all class movements and exercises, as well as in all other movements of the school, the aim should be to secure two things, — promptness and quietness. A certain amount of machinery is necessary in school and class management, especially in large schools and large classes; but the less this appears to the eye, and the less of noise and clatter of wheels and pulleys is heard, the greater is the evidence of real power and efficiency on the part of the teacher. As little time as possible should be spent in constructing and working

elaborate systems of mechanism for securing attention or controlling the class. Intelligent interest in the subject and full occupation of time are the two most efficient means of preventing disorder and commanding attention. It should, moreover, always be remembered that young children can give earnest attention for only a short time.

Steps in Teaching. — The progressive steps in teaching are determined, with sufficient distinctness, by the general laws of mind. These have been considered in a previous chapter, and it will only be necessary here to indicate their application somewhat more specifically. The first law affirms that the mind naturally receives or grasps the material of knowledge in the form of wholes or aggregates.

Division of Matter. — Consequently, the subject-matter of instruction, in any department of study, should be divided into convenient portions in such a way that each portion shall have a good degree of unity and completeness in itself. These portions may be called "lesson wholes," or lesson unities. Not infrequently these divisions will contain too much matter to be fully treated in one recitation period. In this case an introductory outline-lesson should be given first, presenting a general view of the whole, and indicating subdivisions for subsequent lessons. Such introductory lesson will conform to the general laws of teaching, but will embrace only two steps, — the presentation of the whole, and an analysis of this into its appropriate parts.

Introductory or Preparatory Step. — This step consists in bringing the minds of the pupils into a state to grasp readily, easily, and eagerly the matter of the new lesson. This is done by calling up into consciousness, by brief

questioning or by other means, some previously acquired knowledge to which the new material is very closely related. The old may be a familiar fact, process, rule, law, or principle to which the new is related by similarity, contrast, or contiguity.

This preparation may or may not include a direct statement of the purpose of the lesson. If the lesson has been previously assigned for study on the part of the child, the assignment has necessarily indicated the end to be reached, and a distinct statement of this may be required of the class at the outset.

Second Step: Presentation. — The second step is the presentation of the matter of the lesson in accordance with the first general law of teaching. In case of previously assigned lessons, the matter is already before the class, and a clear statement of it should be required from some pupil.

Third Step: Analysis. — The third step consists in the thorough mastery of the new material as directed by the second general law of teaching, and the uniting or assimilating of the new with the old by means of natural relationships. The new thus enters into organic relations with the old, and becomes a part of the permanent possessions of the mind. In many perhaps in most cases the work of the recitation closes here, with a brief review of the ground passed over and of the points made during the process.

A Fourth Step: Abstraction. — In lessons which involve the process of induction, and in those from which some general law, principle, or rule, may be inferred, a fourth step must be taken. The general notion, law, principle, or rule must be separated and drawn out from the individual facts, examples, or cases in which it is involved,

and clearly and definitely formulated. This step is illustrated by the deduction of a rule in arithmetic from a number of examples, or a law of language from a number of sentences, or an ethical rule of conduct from the teachings of biography and history. As far as practicable, pupils should be led by questions and suggestions to make such inferences for themselves and to clothe them in their own language. The most valuable moral principles and practical lessons are taught in this way.

A Fifth Step: Application. — A fifth step naturally follows the fourth: the general principle or rule reached in the fourth step is applied to new examples, to other individual cases, and to the solution of problems connected with every-day life. This is a process familiar to every teacher, and one which children delight to perform for themselves. It is one form of generalization and classification, and in some studies should receive a large share of time and attention. Many recitations are occupied exclusively with this step, as others are by the fourth, and as most are by the first three.

An attempt to embrace the five "formal steps" described by some German educators, which are essentially the same as the steps here indicated, in *every* recitation, is exceedingly unfortunate. The attempt forces the creation of purely artificial divisions, restricts freedom of action on the part of the instructor, and reduces teaching to an unnecessary and unfruitful formalism. The best results will usually be attained in the recitation if the exact form of the teacher's work and the precise length of the steps which he shall take, although predetermined to a large extent by the nature of the subject and by previous preparation, are left to be

directed somewhat by the conditions at the time and by circumstances which may arise as the work goes on.

Methods of Teaching and Testing. — Class instruction may be given by somewhat formal lectures, by familiar explanations of topics, by questioning, or by a combination of questioning and explanation and illustration. This combination is usually the most effective method in the ordinary school.

Testing may be done by questioning, or by requiring pupils to discuss and explain assigned topics without questioning. Each method has advantages peculiar to itself; but the best results are secured, in most cases, by a combination of the two methods. Questions may be answered and topics may be discussed either orally or by writing. Both methods should be employed; the oral more with young children, writing more with advanced classes.

Advantages Compared. — The method of testing or reciting influences to a considerable extent the method of studying. The pupil prepares, perhaps unconsciously, to do what he is expected to do. If the recitation is conducted topically, he will devote more attention to the subject-matter of the lesson as a whole, will observe the order of arrangement of the various parts, will be able to give an analytical outline readily and accurately, will secure a good knowledge of what may be called the form of the lesson. This is excellent as far as it goes, and in some subjects is very desirable: but it may be form without substance; that is, for example, the pupil may have spent so much time and mental energy in fixing in memory the order of events, that he has failed to inquire into their real significance or their inner relationship; or he has struggled so hard to

remember which of several statements precede and which follow, that he has failed to inquire why this arrangement is better or more necessary than some other. There is more danger of this result with elementary than with advanced classes, but it is not confined to young children.

Critical questioning leads to careful study of details, not of arrangement of matter merely, but of the reasons for the arrangement; not of the order of the book simply, but of the logical and necessary order, — in a word, not of the form alone, but of the content of the form. The topical test should consequently be supplemented by intelligent and, upon important points, exhaustive questioning.

The topical method affords opportunity for practice in the use of language in connected discourse upon a subject supposed to have been thoroughly studied, for the careful selection and arrangement of words, and for putting important points in the clearest and most effective way. It cultivates the power and helps to create the habit of presenting, in good order and in good form, thoughts previously considered and arranged. It does not, however, as is sometimes supposed, cultivate the power of systematic thinking to any considerable extent; it does not cultivate quickness, sharpness, and readiness of thought; it does not keep the mind awake and alert, as vigorous and searching questioning does. Evidently the two methods should be constantly employed if the best results are to be reached, not merely in the acquisition of knowledge, but also in the acquisition of mental power and of skill and facility in the use of that power.

Questioning, etc. — Questioning, as a practical art, is

so important and essential a part of the processes of instruction and testing, that a little special attention must be given to it. The ability to question well is scarcely less a requisite of the teacher than of the lawyer. The success of both depends largely upon the skilful use of this art, and the teacher should spare no reasonable effort to become an adept in both the matter and manner of questioning.

Prerequisites on the Part of the Questioner. — The prerequisites for successful questioning are in substance the same as those for teaching and examining generally.

(1) *A knowledge of the laws of mental action, and especially of the laws of association and suggestion*, is a first requisite. By his questions the teacher gives direction to the activities of the pupil's mind, turns the "current of thought" now this way and now that, stirs first one and then another element of interest and incitement to exertion. This can be done well and wisely only provided the teacher understands how one form of psychical activity is related to another, and how the mind naturally and spontaneously assimilates the various materials of its knowledge. Not seldom some questioner bewilders, mystifies, and perplexes, because he does not perceive the present attitudes of the pupil's mind, and consequently fails to give it any definite direction, leaving it to feel about at random, and grope in the dark. Very likely the teacher pronounces the scholar stupid for hesitating and blundering, while in fact the charge of stupidity properly lies in quite the opposite direction.

(2) The second most important requisite is *a thorough knowledge of the matter in hand, and of its relations to other parts of the same general subject*, to what has preceded, and to what is to follow. Without such knowl-

edge the teacher can have no natural starting-point for his own share of the work, and cannot bring into the pupil's consciousness, in right order, the preliminary matter and ideas necessary to indicate the direction in which his activities are to be exercised.

(3) It is essential also that the teacher *have a definite purpose or end in view,* to the attainment of which all his questions and efforts shall be directed. Much questioning, like much other so-called teaching, goes for nothing, serves no useful purpose, accomplishes no appreciable result, because it has no previously determined aim, no specific points to be reached or principles to be established. The teacher labors as one who vigorously "beats the air," and the pupil as one who struggles violently in a tread-mill. There is abundant waste of energy, much apparent movement, but, after all the display, no real progress.

As to Questions and Answers. — Certain general characteristics of questions can be suggested, — characteristics which all questions should possess, — but the teacher of experience and skill will not adopt and follow an unvarying order and form in the structure or arrangement of his questions; he will seek to introduce some variety into this as into all school-exercises.

Many questions will take the form of carefully constructed, complete interrogative sentences; some will consist of short phrases; others will be embodied in single words. The form of a second question must often be determined by the answer to the first, the form of the third by the answer to the second, and so on, each question being adapted to the condition of the pupil's mind, as revealed by his successive answers.

Long lists of previously prepared questions for the

development of some idea, or of the meaning of some word, or for the elucidation of some topic, are of value chiefly as indicating the general course which the teacher intends to pursue and the end which he expects to reach. The substance of these questions may be used, but the form of the interrogations, and to a considerable extent even the order, will be determined by the replies of the class to the first questions. This fact must be kept in mind in the preparation of all so-called development-lessons and in teaching such lessons.

All questions should be simple and clear in language, definite and direct in meaning, and in structure adapted to the degree of development and intelligence of the class. As a rule, they should not directly involve the answer, should not be so constructed as to excite the propensity to guess, and should not admit of the answer "yes" or "no."

Teaching-questions should be arranged in consecutive and logical order, should be calculated to provoke thought, and should in many cases suggest the direction in which the answer will be found. In some subjects, questions for examination must take a logical order; in other subjects, this order may be disregarded.

Manner in Questioning. — Here, as in all other parts of his work, room must be allowed for the teacher's individuality to manifest itself. It is, however, important that the teacher of young children have a good degree of animation, a large amount of sympathy, a contagious earnestness and interest in the work, and much tact in making ready and skilful use of unexpected answers from the class.

Questions should be asked in ordinary speaking-tones, uttered distinctly and clearly, and the habit of repetition

should be avoided. For teaching purposes, questions should be put slowly; time should be allowed for some deliberation on the part of the pupils; questions for testing may be put with more rapidity, and answers may be demanded, in many cases, with very little opportunity for reflection. The subject-matter is supposed to be immediately in mind, and not to require any considerable degree of examination and arrangement.

The ideal in questioning is to secure the undivided attention of every member of a class, and to compel every pupil to answer mentally every question. No method will absolutely reach this ideal, but a master of the art of questioning will make near approach to it.

Calling for Answers.— Much depends upon the method employed in calling members of a class to recite or answer questions, and various mechanical devices have been suggested for doing this, each device having some excellences and some defects peculiar to itself. Among these is the *alphabetical or consecutive* method, by which pupils are called in the order of their names arranged alphabetically, or in the order in which they sit or stand in the class. The objections to this plan are obvious, yet for some purposes it may be employed occasionally with advantage.

Another is the *random* method, by which pupils are called without reference to the position of their names in the alphabet or to their places in the class. If this plan is adopted, questions should be put, as far as practicable, before any one is called to answer; and it should be understood that the same person may be called several times during the recitation; otherwise this plan will be little better than the first for securing continued attention from all members of the class.

The *simultaneous* method, by which the whole class answers all questions in concert, is open to such grave objections that no teacher will employ it except occasionally for the sake of variety, or for the sake of economizing time. Generally, the best results will be secured by varying the method somewhat, and resorting to such devices as are suggested by the nature of the subject, the character of the class, and the exigencies of the occasion. Any one plan unvaryingly pursued is likely to become monotonous and wearisome.

Character of Answers. — The character which answers should have has been indicated, in a general way, in the discussion of questions, but one or two points demand a little special consideration.

Guessing should not be tolerated. This is encouraged by allowing pupils "to try" two or three times, as is sometime done in spelling-lessons. If the scholar understands the subject, if he knows what the question calls for, he can give a correct answer at once; if he does not know, he should not be encouraged to guess, with the hope that the guess may chance to be correct.

Answers should be in good language and in good form, but time should not be wasted by requiring a repetition of the question in the answer, or by insisting — in all cases, in all subjects, and in all grades — that the answer shall take the form of a complete sentence. With young children this is frequently desirable; but an "iron-clad" rule in respect to this matter results, in not a few cases, in emphasizing form at the expense of substance, in "tithing mint, anise, and cumin, to the neglect of weightier matters." The answer should, in all cases, express clearly and precisely the idea, and when possible should be in words of the pupil's own selection. The

repetition of the teacher's language, or of the words of the book, does not give positive assurance that the scholar fully comprehends the meaning of what he is saying.

"Telling" may be Teaching. — The oft-repeated maxim, "Never tell a pupil what he can find out for himself," needs to be received with considerable limitation. Not a little time is wasted in attempting to question out of a pupil's mind, or into it, something which should be told to him directly and immediately. This is not done to save the scholar hard work, but to put him into a condition to expend his time and energy in work which shall yield more and richer returns. Care and wise discretion must be exercised in determining what and how much to tell, but no pet theory or "educational maxim" should stand in the way of doing what the best good of a pupil, at any particular time, requires. A well-known writer says, —

"Telling the right thing at the right time and in the right way *is* teaching. Very often time is worse than wasted in a futile attempt to question out of a pupil what has never been questioned into him, and what he cannot by any possibility evolve from his 'inner consciousness.' It is one of the best characteristics of a good teacher that he knows exactly when and what to tell, as well as what to impart or to elicit by questioning."

Superintendent Howland writes in respect to the class-recitation, —

"Whether we regard the prime purpose of the school as mental or moral instruction and discipline, the formation of character, or the manual skill that shall aid in securing a comfortable livelihood, the recitation is that about which centre all the activities of school-life, giving it success or stamping it with failure.

"The personal influence of the teacher is of the first importance; the power to control and direct, invaluable; the magnetism which shall inspire and incite to earnest, loving effort, a necessity to the accomplished, successful teacher: but all these qualifications find full scope in the recitation, and without this end they have little cause or reason to be.

"The recitation is the controlling influence, determining the length and character of the lessons, the manner of their preparation, the conduct of the pupil, his hours of study, his interest in school, and his regard for his teacher, and gives the color, the value, to all his school-days, his waking and sleeping hours. It is the recitation, with its direct or indirect influences, which makes him a trusty friend or a hopeless truant, a student or a scamp, and which will guide him along the paths of honest and successful industry, or into by-ways of indolence and worthlessness. Here he finds the rewards of well-doing or the condemnation of his negligence, — an incitement to renewed effort, or an excuse for feeble exertion and lax endeavor.

"In the recitation, too, the teacher gives proof of her calling or shows her unfitness for her position. In the recitation is concentrated the devotion, the thought, the life of the teacher, and the work, the purpose, the zeal, and the performance of the pupil. Here is displayed the life of the school, and here is decided whether the school shall be a means of growth and development, or a source of unworthy motive, of false aims, and ignoble character."

FOR READING.

Page's Theory and Practice of Teaching, chapters vi. and vii.
Fitch's Lectures on Teaching, lecture vi.
Howland's Practical Hints to Teachers, chapter viii.
McMurry's General Method, chapter viii.

White's Elements of Pedagogy: The Lesson and the Recitation.

Rein's Outlines of Pedagogics: The Formal Steps of Instruction.

McLellan's Applied Psychology, chapters ix. and x.

Lange's Apperception, Part II., section 3: The Process of Teaching.

Swett's Method's of Teaching, chapter vi.

Prince's Methods in German Schools, chapter xiii.

Tate's Philosophy of Education, Part III.

Arnold's Waymarks for Teachers; topics, Purpose and Plans; The Lesson.

Herbart and The Herbartians, Part II., chapter v.

CHAPTER X.

ATTENTION AND INTEREST.

The Learner's Attitude. — The efficiency and productiveness of the teacher's work depend very largely upon the attitude of the learner's mind both toward the instructor and toward the subject-matter of instruction. The attitude must be a receptive one, but not merely receptive; it is not enough that the pupil is willing to receive, in a passive way and without positive effort on his own part, whatever the teacher may present. There must be an openness of mind, but not simply an openness; it is not sufficient that the way of access to the soul be free from bars and bolts. Receptivity and openness are something, are much indeed, but these terms do not describe the mental attitude of a learner, of a genuine seeker after knowledge. The true student is not merely receptive and open to the approach of truth.

An Active Condition. — The desired condition is an active one; the mind is wide awake, keenly alert, waiting and eager to seize and appropriate anything placed before it, seeking to reach out and to grasp whatever it can lay hold upon. The attitude is much like that of a contestant in a race, watching for the signal to leap forward, impatient of delay and restraint, anticipating the pleasure of voluntary and vigorous action, and the

joy and glory of victory. The eagerness which marks the commencement of a lesson should increase as the work progresses, as the excitement of the runner becomes more intense when he enters upon the "home stretch," and the goal comes into view, and the encouraging shouts of his friends nerve him to fresh effort.

Attention. — This attitude of mind is usually described by the word "attention." Scarcely separable from attention, indeed creating, inspiring and sustaining it, is that feeling called interest, which will be considered farther on. The great importance of attention is recognized by all students of applied psychology, and in a few cases it is made almost the basis of instruction in pedagogics and pedagogy. The emphasis thus put upon attention may be readily pardoned, although the resulting impression is sometimes unfortunate and misleading. Attention comes to be regarded as a distinct form of psychical activity, or a special and specific mental process. It has been described as a mental process immediately caused by the action of the attributes of external objects, and as a movement of ideas unified and controlled by the conception of some end. The truth of both statements may be admitted, although the first describes simple perception, and the second any regulated act of thinking or reasoning.

Attention Described. — For our own purpose attention may be described as *an intensified condition of any form of mental activity directed to some particular object or subject*, or a state of mind in which its energy and activity are concentrated upon some particular object of observation or thought. This act of mental concentration may be compared very conveniently to the action of the microscope in concentrating the rays of

light. The psychical activity is brought to a focus; the whole effective mental energy expends itself upon a single object. The result is that the object is sharply defined, completely separated from all other objects, made to stand out clear and distinct in the mental vision. The microscope may be of a high or a low power; in the first case the field of view is very limited, but the object is marvellously distinct; in the second case the field is broader but the object is less clearly defined.

Mental concentration follows the same law; the narrower the field, the more limited the view, the more intense the attention becomes and the more clearly defined the object of observation or of thought appears. Broaden the field, extend the view, intensity of attention is diminished and obscurity and indistinctness take the place of clearness and distinctness. The inference is obvious that if the subject-matter of a lesson is to be thoroughly impressed upon the mind of the pupil, is to be fully comprehended and surely retained, the points to be considered at one time must be few and must be sharply defined.

Attention External and Internal. — This concentration of mental energy and activity may be either upon external objects or upon internal ideas and states of consciousness; that is, attention may be either external or internal. In the first case it is intensified perception and observation; in the second case it is reflection so intensified as to absorb all psychical energy, or it is profound thinking or reasoning, or it may be imagination taking possession of the whole soul. In many cases external and internal attention alternate with great frequency; some striking fact of observation

excites for a moment the most intense attention; the fact is fully grasped by the perceptive activities; immediately the mental energy turns itself inward; the process of assimilation or apperception begins; the mind is absorbed in giving this new acquisition its proper place, in classifying it with related knowledge and making it a part of the permanent possessions of the soul.

Again, some object of perception attracts and fastens the attention; immediately, by the almost unconscious influence of a discovered relationship, representations of previously known objects come crowding into the mind, and the attention turns from the external to follow eagerly a train of suggested and recalled experiences.

It is obvious that the forms of attention, if the term "form" is allowable, are as many and as various as the forms of mental activity. In the processes of learning and teaching, there is need that psychical action be intensified and turned now in one direction and now in another. The problem is how to produce the desired degree of intensity and to give it the right direction.

Attention Non-voluntary and Voluntary. — Preliminary to some suggestions toward the solution of this problem, it is necessary to notice the two varieties of attention, or perhaps it would be more strictly accurate to say the two varieties of means for securing attention, since attention itself is essentially the same, by whatever means secured. The usual division of attention is into non-voluntary or reflex, and voluntary or volitional.

The non-voluntary is produced by agencies or means not immediately, or not at all, under the control of the will of the individual; such means are called allure-

ments, incitements, or stimuli. The voluntary is produced by an impulse of the will. Attention, which is reflex in its inception, may become voluntary as the mental activity goes on and the feeling of interest is aroused.

Attention of the Child Non-voluntary. — At first the attention of the young child is entirely reflex or non-voluntary. At school age it is still mainly reflex, but the developing force of the will and the growing power of habit, if the training of the child has been wise and uniform, are gradually bringing the various forms of mental activity into subjection to the self-directing power of the mind; more and more attention is becoming voluntary. At maturity attention is chiefly voluntary, but never entirely so if the testimony of one's own consciousness may be trusted. The wandering of our thoughts when we would hold them steadily to some point, and the persistent and repeated return into consciousness of unwelcome subjects, afford illustrations of the tendency of mental activity, at all periods of life, to break away from the control of the will, and to wander at random, or to allow itself to be held captive by some dominant feeling, perhaps of a morbid character, which defies and successfully resists the power of self-control.

Mechanical Devices, etc. — The teacher of young children is chiefly concerned about securing non-voluntary attention. While interest is the primary and only permanent motive-power for exciting and retaining attention, certain devices of a mechanical nature may be employed which have an influence in arresting temporarily external attention; favorable conditions may be created, and unfavorable ones may be removed or

avoided. Such devices and conditions, for the most part, affect the body and especially the nerves of sense, and through these affect the mental activities.

It will be necessary here to refer only very briefly to devices and conditions, as most of them have been considered elsewhere.

(1) School-buildings and school-rooms should be removed, where this is possible, from all sights and sounds which are calculated to distract attention. Classes reciting should be secured from interruption by other pupils or by unnecessary movements of any sort in the room.

(2) The arrangement of seats in the school-room, and more particularly for recitation purposes, should be such that all pupils may be easily observed by the teacher without special effort. Watching for disorder or inattention is disagreeable and irksome to an instructor and offensive to all well-disposed pupils.

(3) School buildings and rooms should be kept free from uses which tend to create associations unfavorable to the concentration of mental energy and activity upon proper school-work; all associations connected with school-buildings and their surroundings should be made, as far as possible, to contribute to the efficiency of instruction.

(4) The manner of questioning and of calling pupils to recite should be such as to necessitate continued and careful attention.

(5) All recitations, lessons, and exercises of young children should be short and animated. Provision should be made for frequent change of position. Pupils should not be allowed to sit, or required to stand, through the entire recitation.

(6) In demanding attention regard should be had to the time in the day and to the physical and mental condition of pupils. Carefully conducted experiments appear to verify the conclusion long since reached by the testimony of every-day experience and observation, that mental vigor generally and the power of attention particularly diminish from the beginning of the school session to its close with considerable regularity, if the session is of the ordinary length. Consequently, demands upon the pupil must be less exacting in the latter part of the day than in the early morning.

Tests reported seem to indicate that as mental energy decreases, the loss in accuracy of work done is greater than loss in the amount. One investigator reports that he found an average falling off in accuracy of thirty-three per cent between the work in the morning and that done after four or five hours of instruction. Much, however, will depend upon the frequency of periods of rest, upon changes in the form of mental activity, and upon the hygienic condition of the school-room. Experiments have not yet been sufficiently extended to justify any broad generalizations, but such investigations have an important bearing upon the question of the proper length of school sessions for children of different ages, and also upon the question of "recess or no recess" during the sessions. Probably the amount of time given to recesses in most of our schools is too limited. It is not the length of time given to study or instruction that tells, but the intensity of attention and the energy and vigor of the mental movement.

(7) **Occasional Relaxation.** — The old adage concerning the "bow always bent" has a considerable measure of truth. The mind of an earnest student needs oc-

casionally that thorough relaxation which comes only from the appreciation and enjoyment of the humorous, provided the enjoyment does not degenerate into boisterousness, nor the humor into coarseness and vulgarity. Refined and delicate humor may sometimes, especially toward the close of a protracted session, be employed to relieve the strain of continuous attention, and remove that irritation which serious contact of the mind of the teacher with the mind of the pupil may unintentionally excite.

The teacher who has his school or his class "well in hand" may "once in a while" safely relax for a few moments the restraint which usually rules in the school-room and permit an expression of good-natured feeling which relieves the monotony of school life. It is freely conceded that regard must be had for times and seasons, and especially for the disposition and temper of pupils.

Professor Sidgwick says, in his essay on "Stimulus in School:" —

"How then are we to stimulate attentiveness? The obvious answer is, by making the lessons as interesting and amusing as possible. Interesting of course: but how? First, manner goes for something. The teacher should be as easy and friendly and familiar as he can; all stiffness is a mistake. 'But a schoolmaster must keep up his dignity.' If that means he must not make a buffoon of himself, and must not allow liberties to be taken with him, — then, certainly, yes. But my experience is that what is usually called at school 'keeping up your dignity' is altogether a mistake. You should put no artificial restrictions upon yourself. You should be able to say anything you like or want to say to your class; any illustration, any anecdote or jest which is in point, any perfectly familiar address or appeal, — I would even say any

digression; in short, let the footing on which you are with your pupils be natural.

"Do I really mean *amusing?* Yes, certainly, as amusing as possible. I don't mean necessarily that the master should make jokes, for the simple reason, if for no other, that jokes are so often not amusing. But he should not be afraid of a joke if it comes in his way. For instance, I remember being present when a boy, being read out bottom of a grammar paper, [given the lowest standing], said playfully but respectfully, 'I think there must have been some mistake, sir.' To whom the master replied gently, 'I think there must have been a good many.' The class were hugely delighted, and for the rest of the hour worked all the better for it."

Interest: its Nature. — As previously stated, the only natural and sure incentive to attention is interest. We inquire, first, what is interest; second, how is interest best excited and maintained.

The term interest is employed in connection with a great variety of affairs and with widely differing meanings. A man is said to have large business interests: he is interested in some venture, in a suit at law, in a patent right, in the development of a mine, or in any one of a hundred other matters. With these uses of the word we are not here directly concerned. We have need only to inquire what interest is when the word is used in relation to school affairs, and especially when employed to denote that mental state of a teacher or of a pupil which is designated by the words "being interested."

Interest as Feeling. — In strictness of speech interest is not definable; it can be fully known only by personal experience. For our present purpose it will be sufficiently accurate to say that in the child, and, to a large

extent, but not exclusively, in the more mature person, interest *is feeling; that is, a more or less excited state of mind,* the excitement varying in intensity from a movement so gentle as to be hardly observable in consciousness to a disturbance of a most violent character. In its mildest form the feeling is a simple emotion, a gentle ripple upon the surface of the soul, most frequently pleasurable but sometimes painful, drawing or urging the mind toward that which excites the feeling. When interest grows more intense the soul is stirred more and more deeply, and the feeling becomes exceedingly complex, emotion, affection, and desire being mingled together. In many cases pleasure, pain, hope, fear, anticipation, expectation, and even dread and terror, may be combined in various degrees to produce interest.

Interest more than mere Feeling. — In young children interest can hardly be more than mere feeling, usually a state of agreeable mental excitement, which in the nature of things can continue for only a brief period. So long as interest is only feeling it must be transitory. Continued interest, consequently, involves something in addition to feeling. As intellectual development goes on we come to be interested in objects, in courses of life, in men and things, not because they excite emotion, but because they appeal to the judgment, the reason, the imagination, and other purely intellectual activities. It may be said, and probably with truth, that in all these cases a pleasurable feeling is excited by the exercise of the mental activity; but this feeling follows or accompanies, and does not precede and excite, the intellectual action. It is not the essential element in our interest, while it does, without doubt, give a pleasurable tone to it, and render it more effective.

In addition to the emotion of pleasure resulting from proper activity, either physical or psychical, there is positive enjoyment in mastering difficulties, in overcoming obstacles, in extending the field of one's mental vision, in becoming acquainted with more and more of science, art, literature, history, and other subjects of study. The feeling which accompanies this broadening of the mind and this increase of knowledge gives a sort of cheerful glow, a comfortable warmth to what would otherwise be merely a cold intellectual operation.

The condition of soul which results from this union of intellectual expansion and comprehension, which may be called culture, with this pleasurable emotional state, the necessary concomitant of intellectual culture, is the essence of "many-sided" interest. In this condition the mind exercises its activity with ease and pleasure in many directions; if one avenue is closed it turns readily to another; it gathers food for thought from many and diverse subjects, so that it is in no danger of famishing; it draws support, if support is needed, from a multitude of sources, so that it is never forsaken and helpless. This is the ideal condition of thoroughly educated manhood. In the ordinary school, however, the teacher will be chiefly concerned with the problem of exciting and maintaining that familiar sort of interest which secures immediate attention to present school work, while he will not be unmindful of the importance of that more permanent interest which school studies and instruction should create in the mind of the pupil.

Varieties of Interest and Means of Exciting Interest. — So far as interest is a feeling it is essentially the same, by whatever means it is excited; but it is convenient, in discussing the subject, to speak of different varieties of

interest as we speak of different desires. The divisions, however, cannot be made mutually exclusive.

Interest is either (1) instinctive and spontaneous or (2) rational; that is, it springs up in the soul without previous thought or reflection, without any consideration of advantage or profit of any sort, when certain conditions exist; or it is kindled up by thinking and reasoning about advantage, profit, benefit, good of some kind which may be secured. The interest of the young child is mainly of the spontaneous sort; it is not necessary to reason with the child or to exhort him, but simply to create the necessary conditions, and the interest appears. With more advanced students there is usually need of reasoning and explanation, of the presentation of advantages of one sort or another to be secured and enjoyed.

Curiosity, Love of Knowledge. — The instinctive disposition of the child to seek to know things, to become acquainted with his environment, we call curiosity. It is the spontaneous reaching out of the soul to meet the external world. It reaches out, not from considerations of advantage, but because of an irresistible impulse to do so. This curiosity itself is sometimes called native, inborn interest; but it is probably more strictly accurate to consider the feeling of pleasure which attends and follows gratified curiosity as spontaneous interest. Baffled, defeated, unsatisfied curiosity is a source of pain rather than pleasure; it destroys interest.

The most effective means of securing the interest of young children is found in the judicious gratification of this spontaneous impulse of the soul. The resulting glow of pleasure holds attention until fatigue gives warning of the need of relaxation.

Gradually this mere instinctive impulse of the child

becomes, in the more advanced pupil, the love of knowledge. At bottom there is still the spontaneous element, the natural craving of the soul for that which supports its life and ministers to its growth and development. This native impulse is now re-enforced and strengthened by rational considerations. The pupil desires to know because knowledge will be of service to him in the conduct of life, will help him "to get a good living," will give social position, personal influence, political power and preferment.

Besides all this, a feeling of positive pleasure, which is near akin to interest, if it is not interest itself, results from the appropriate exercise of the various forms of psychical activity. It gives an agreeable warmth to the soul to put forth its powers in perceiving, in remembering, in imagining, in judging and reasoning. In addition to this there is a sort of exhilaration, a moderate degree of exultation of mind, springing out of the consciousness of power to overcome difficulties, to solve hard problems, to throw new light upon the hitherto obscure, to uncover hidden treasures of knowledge, and to push out a little further the boundary line between the fully known and the merely hypothetical.

In order to excite and keep alive a sufficient degree of interest, in the average pupil, it is only necessary for the teacher to make provision for the proper gratification of this native love of knowledge, to afford free scope for the exercise of the mental powers, and to render such aid, and only such, as may be necessary to insure success and mastery to the student in his struggle with difficulties. Too much assistance lessens the feeling of self-reliance and the pleasure of victory, and consequently lessens interest.

Natural Interest. — Interest may be regarded as natural and wholesome, or artificial and unwholesome, according to the nature of the means by which it is excited. That interest is natural which is excited by natural and legitimate means; that is artificial and unnatural which is excited by artificial devices and contrivances. Among the natural means of arousing interest are, first, *the object or subject of study itself.* As previously stated, the soul has a spontaneous love of knowing. It hungers after knowledge. The satisfaction of this hunger produces a feeling of pleasure and enjoyment, of real interest. The skill of the teacher is shown in the selection of matter adapted to the age, the stage of development, and to what may be called the assimilative or apperceiving power of the mind resulting from its previous acquisitions.

Experience and observation unite in testifying that a new object of study, in order to excite interest in the learner, must have two apparently opposite characteristics. It must have some degree of *familiarity*, must bear some resemblance to one or more known things, must have some points by which it can, without too much difficulty, be attached to the present content of the mind. An object entirely new, especially if it be very unusual and strange, seems to repel and half paralyze the mind. The presentative powers hesitate to lay hold upon it; the impression felt is painful rather than pleasurable. Under such circumstances attention cannot be secured.

While entire strangeness must be avoided, the object should possess something of *novelty and variety;* with its likeness there should be a measure of unlikeness. The mind refuses to be interested in sameness and in

the mere repetition of the familiar. It delights in uniting something new with the old. This is not by any means a recent discovery in psychology and pedagogy. A century ago Maria Edgeworth wrote, in her "Practical Education," "Some people imagine that, as children appear averse to repetition, variety will amuse them. Variety to a certain degree certainly relieves the mind; but then the objects which are varied must not all be entirely new. Novelty and variety joined fatigue the mind. Either we remain passive at the show, or else we fatigue ourselves with ineffectual activity." In illustration she relates the oft-repeated story of the Esquimaux taken through the streets of London. "They walked for several hours in silence; they expressed neither pleasure nor admiration at anything which they saw. When their walk was ended, they appeared uncommonly melancholy and stupefied. As soon as they got home, they sat down with their elbows upon their knees, and hid their faces between their hands. The only words they could be brought to utter were, 'Too much smoke — too much noise — too much houses — too much men — too much everything.'"

Second, the *relations and connections* of the object. Interest in the object itself is sometimes called direct, and interest in its relations and connections, indirect. The latter, however, is as natural, legitimate, and wholesome as the former. Many objects are interesting only on account of their relations, associations, history, and so forth. Much of the interest in school studies and instruction must of necessity be of this indirect sort.

Perhaps it would be better to say that indirect interest unites itself with direct so intimately that the two become inseparable. The more relations an object has,

the more interesting it appears; the interest in any single historic event increases in proportion to the number of other events with which it is connected.

Taking advantage of this fact it will often be easy for the teacher to increase the interest of pupils in objects, subjects, persons, and events which otherwise would have little attraction.

Artificial Interest. — Artificial interest, as already stated, is that which is excited by devices and contrivances having no natural and necessary relationship to the subject in which interest is to be created. These means are equally applicable to all subjects and to all objects which fall within the province of the school. The fatal objection to such interest is, that, at best, it can be only temporary, and that it is generally unwholesome in its influence upon character.

Prizes, etc. — Among these devices are prizes of various kinds, including articles of pecuniary value, class honors, rolls of honor, merit marks, etc. It is admitted that these are employed by some excellent teachers and in some good schools. It is further admitted that a few instructors are able to use such incentives so as to secure valuable results without apparent injury to the character of pupils. But after all the concessions which can be asked have been freely made, it still remains true that, in the great majority of cases and in the hands of most teachers, devices like those named, and others of similar nature are productive of vastly more harm than good.

A distinction may be made between prizes and rewards. A prize is something which can be secured by only one of two competitors, or by one, or a very few, of any number of competitors. All may strive, but only

one or a very small number, can possibly win. A reward, on the other hand, is something which, however many are concerned, all may attain who reach a certain required degree of excellence. The fact that one obtains the reward does not preclude others from obtaining it. If the standard of excellence is not placed too high, not above the possible attainment of any faithful, earnest, and industrious student, many of the objections which are justly urged against prizes cannot be urged against rewards. If rewards could be made natural instead of artificial, they would be legitimate incentives to interest and exertion.

Objections to Prizes. — Among the objections to prizes a few only can be mentioned. First of all, and the most serious of all, is the objection that the struggle for a prize, in a majority of cases, excites, between competitors and their friends, feelings of unkindness, ill-will, envy, and jealousy. The bad rather than the good elements of human nature are excited to activity; the competitors are less generous, less noble, less excellent in many respects, when the contest ends than when it commenced.

Another fatal objection is that the interest aroused by the offer of a prize, in the very nature of the case, is confined to a very small number, however large the class or the school may be, and those included in this number are generally the persons who least of all require such artificial stimulus. The average pupils and those below the average, who are in especial need of stimulation, remain unaffected, or possibly are left in a worse condition than before.

It is hardly necessary to speak of the temptation to dishonesty and deception which comes with the ambi-

tion and struggle to win a prize, or of the great practical difficulty of bestowing a prize justly; or of the fact that the prize crowns success rather than effort; or of the injury sometimes done to the health of nervous and excitable pupils. These and other evils of the prize system are well understood.

It is not urged that artificial incentives to interest are never to be employed, but that they should be employed only in exceptional cases and for brief periods. Of two motives which may be used, the higher should always be selected. The degree of excellence to which any person has attained may be readily estimated by the worthiness or unworthiness of the motives which determine his conduct. The teacher elevates or degrades his pupils by the nature of the incentive to exertion which he habitually employs.

Sympathetic Interest. — Interest excited by sympathy is natural and legitimate, although sometimes perverted and employed for base purposes. The general law of mind is, that feeling of any kind exhibited by one person tends to the production of like feeling in companions and associates, and indeed in all who are near enough to see and hear, unless the behavior of the individual is such as to excite the feeling of aversion and disgust. It is as if the overflowing emotion of the one soul poured itself over into another soul through some unseen channel, or the excited current in the one mind discharged itself, along an intangible conductor, into another mind.

This is seen in the social gathering, where one earnest soul, full of living interest in some subject, stirs the whole company and sets them on fire with his own enthusiasm. It is seen in the great assembly where the

orator fills the whole multitude with his own burning zeal. It is observed as truly in a dozen children crowding about some boy or girl relating a marvellous story of personal experience or observation.

In accordance with this general law interest in the teacher communicates itself to pupils; lack of interest in the teacher will be responded to by lack of interest in the child. The tide of interest in the school or in the class will never rise higher than the tide in the teacher. But interest on the part of the instructor must be genuine, and not feigned; it must be an intelligent interest inspired by a thorough and fresh knowledge of the subject to be taught, and by a conviction of the importance and dignity of the work immediately in hand. The lesson is presented as if this, just now, were the only thing in the world worth doing; everything else is forgotten for the time; the whole energy of the soul is given to the subject and the class.

Care should be taken not to confound true interest, such interest as befits the school-room, with that affectation of interest which manifests itself in loud talking, in violent gesticulation, in rapid and distracting movements over the platform or about the room. This is, in most cases, mere device, and like other extravagant devices soon loses its power and becomes repulsive. True interest inspires, animates, shines in the eye, speaks in the tones of the voice, expresses itself in every feature of the countenance, but it is seldom noisy and never boisterous, never unmindful of the proprieties belonging to the time and place.

Suggestions. — (1) In attempts to excite interest and secure attention it must be remembered that the young pupil is influenced by things *near at hand both in time*

and space. A moderate degree of immediate pleasure moves the child much more effectually, determines the direction of his conduct more surely, stirs him to more vigorous action, than the promise or probability of a much higher degree of pleasure at some future period, even though that period be not very remote. A week, a month, a year are much the same in the child's calendar. To-day he understands; to-morrow is considerably remote; beyond that everything is distant, dim, and shadowy.

Gradually, as development progresses and experiences multiply, it becomes possible for the pupil to represent to himself the future and distant so vividly that the feeling of anticipation and expectation comes to be a source of positive pleasure. When this stage is reached the teacher is able to lead the child to compare a pleasure in anticipation with one in possession and to give the preference to the latter. Attempts to do this to any considerable extent in the earliest periods of school life are likely to end in failure and disappointment, and children may be blamed, with no sufficient reason, for not postponing the present to the future.

(2) *The importance of the feeling of expectation* in securing and holding interest and attention, not only in young children but also in more advanced students, is not generally fully appreciated. The teacher who occupies the entire time of a class exercise in simply hearing pupils recite in succession what they have previously learned, without note, comment, addition, or explanation, can have only such attention as devices and contrivances will command. Possibly this fact accounts for the high value sometimes put upon such artificial means.

Continued voluntary attention is conditioned upon continued expectation. The mind must be in the attitude of *watching* for something more; the feeling is a mixed one; the pain of unsatisfied curiosity is mingled with the pleasure of eager anticipation. In order to induce this state of expectation the matter of the lesson, although in good measure previously prepared by the class, must be unfolded little by little, step by step, each step opening the way for the next, each fact or truth pointing forward to something not yet reached, and every advance evidently bringing the mind nearer and nearer to the attainment of the final purpose of the recitation.

Mr. Sully says: —

"In expectation the attitude of the mind is one of strenuous activity. It stretches forward in anticipation of the coming event. This expectation may be of different degrees of perfection. Thus we may know only the time of the impression, but not its nature. In listening to a new poem or a new musical composition we anticipate the succeeding sounds in their regular recurrence. This anticipation of a new impression (or series of impressions) after a regular interval is a condition of the pleasurable effect of an orderly rhythmic sequence of sounds or sights. The mind not only adjusts itself to each new impression, but has a continual satisfaction of nascent expectation."

This feeling of expectation, turned in a somewhat different direction, has value in the school in addition to its efficacy in securing interest and attention. It is the most potent stimulus to vigorous effort in overcoming difficulties and in the struggle to attain desired ends. No one can do his best in any depart-

ment of labor who has but little or no expectation of success. Consequently that teacher will secure the best results who keeps this feeling alive in children by requiring of them only so much as they can accomplish by reasonable effort. Lessons should be carefully accommodated to the capacities and powers of the average pupil rather than to those of the most brilliant members of the class.

(3) It is obvious that *interest and desire are closely related*, often apparently, perhaps really, intermingled. The usual order, however, is, first, interest, then desire; children especially desire that which interests them. In most cases, in the school, interest is excited for the *immediate* purpose of creating a desire for some object or some course of conduct. The ultimate purpose is generally to secure action of some sort; but voluntary action must be preceded by the psychical activity of volition, and this must be preceded by the impulsive force of desire. The series of mental states and acts consists of interest, desire, volition, attention.

(4) The aim of the teacher should be to aid the pupil in forming as early and as rapidly as possible the *habit of attention*. The effect of habit is to render an act easy, and thus to lessen the effort necessary for its performance. If attention can be made automatic or nearly so, the nervous and mental energy required for a vigorous act of volition is thereby set free to be employed for other purposes. One great end of education is the formation of good psychical habits; the formation of such habits greatly increases the productive power of the mind.

Another important result of a fixed habit of attention is that the mental energy can be concentrated, with

comparatively little effort, upon objects and subjects which excite a very mild degree of emotional interest. One comes to be able to give attention to things in which he is not particularly interested on the side of feeling. He is, consequently, much more completely master of himself in the matter of the selection of studies, and is no longer obliged to yield to the control of "likes and dislikes" in determining the direction in which he shall expend his mental energies.

(5) It should be remembered that intense attention, in any direction, taxes the nervous energy very severely. Such attention is speedily followed by a state of fatigue, a condition of more or less complete physical and psychical exhaustion, when any good degree of attention is impossible. Care should be taken not to make unreasonable demands upon the attention of children or even upon that of more advanced pupils.

FOR REFERENCE AND READING.

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Bain's Education as a Science; topic, Concentration.

Page's Theory and Practice of Teaching, chapter viii.

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Herbart's Science of Education; Second Book: Many-sidedness of Interest.

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CHAPTER XI.

MORAL INSTRUCTION AND TRAINING.

A Moral Being. — Moral instruction and training presuppose a moral being to be educated and trained. Consequently it is important, at the very outset, to have a definite notion of what is meant by a moral being. Leaving aside all metaphysical discussion, a moral being may be defined as a being that can justly be held to accountability for his character and conduct, — who may be rightly commended and blamed, praised and censured, rewarded and punished.

Necessary Elements in the Nature of a Moral Being. — In order that a being may be held justly accountable for his character and conduct, he must possess (1) intelligence, and (2) freedom of choice. He must be capable of understanding clearly the difference between right and wrong, and must be free to choose and pursue one of these in preference to the other. He must be able to comprehend relations existing between himself and others, and, to some extent at least, the obligations and duties growing out of such relations. He must have the ability to see the connection between conduct and its consequences, and the influences of conduct upon the well-being both of himself and of his fellows. He must be capable of receiving instruction and of "growing in knowledge," not alone of the ordinary sciences

and arts, but also in relation to the science of duty and the art of good behavior.

It is not necessary to moral accountability that one should know, or should be capable of knowing with absolute certainty, the ultimate grounds upon which moral distinctions are based. It will be sufficient for him to comprehend such proximate reasons for conduct as commend themselves to the common judgment of mankind, and are approved by the intuitive power of the human soul.

It will be readily conceded that responsibility is not determined and limited by the knowledge actually attained, but by that which might have been attained by reasonable effort, — not by what one really knows, but by what one might have known if he had diligently employed the powers and means at his command.

The second element is as essential as the first. It is not enough to know that one thing or one course of conduct is right, and that another thing or another course of conduct is wrong; there must also be freedom to choose and ability to pursue the right in preference to the wrong. This necessarily involves the power of self-determination and self-direction, or what is usually named the freedom of the will. In the young child it is evident that this power of self-determination exists only in germ and possibility. Consequently, at first, he is held to only very limited responsibility, the measure of responsibility being gradually increased, as the proper education and training of the will increases its effective force and renders it master of itself and of its environment. It is assumed here that the developed and normally constituted human being has the power of self-direction, subject to certain recognized limitations,

but in a degree sufficient to justify holding him to rigid accountability for his character and manner of living. The only justification offered for this assumption at this point is an appeal to consciousness. Every man, and every child of school age, feels within himself a freedom in choosing and acting, and admits, though sometimes reluctantly, that he is responsible for being what he is and for doing what he does.

The Problem. — Given a being possessing in germ the intelligence and freedom necessary to render him accountable for his character and conduct, the problem presented to the moral educator is, how shall it be made reasonably certain that this being, the human child, when fully developed will possess a good character and will choose and pursue a right course of life; that he will be an upright citizen, a faithful friend, an accommodating neighbor, an agreeable associate; that he will be honest in business, just in all his dealings, stern and exacting when there is need of sternness and exaction, yielding and forgiving when these qualities are in place, always considerate, kind, and courteous?

Conditions of a Right Solution of the Problem. — This problem can be rightly solved and the proper character and conduct insured only on condition that the child shall come to possess two things, — (1) a practical knowledge of the right and the wrong in human relations, of what one ought and ought not to do in conduct; and (2) a permanent disposition to love and to do the right, and to hate and to avoid the wrong. Both these things are absolutely necessary in order to reach the desired result; knowledge will not insure right conduct if the disposition is wanting. The disposition

alone will not be enough, since one, with the best of intentions, may go wrong on account of ignorance.

The Teacher's Work. — If these conditions are correctly stated, it is easy to discover the work of the parent and the teacher in the moral education and training of the child. The child is to be helped to obtain the necessary knowledge, is to be instructed in respect to the character he should form and the manner of life he should lead. The outline of the moral powers, found in chapter v., will suggest the general nature of the instruction most needed, and the methods by which such instruction may be given most effectively. Moral intuition will without instruction, when development is sufficiently advanced, perform its office of bringing into consciousness the primary idea of a distinction in the nature of things, of a right and a wrong in character and in conduct. It will not undertake to determine what is right and what is wrong, but merely affirms that somewhere a line of separation exists, and can be discovered by appropriate examination and inquiry. To make such examination and inquiry is the function of the moral perception, the judgment, and the reasoning powers. Consequently, instruction is to be addressed to these activities; the child is to be helped to perceive clearly the moral qualities of states and acts, to see and to appreciate properly the good, the true, and the beautiful in human character and conduct, to feel an aversion for whatever is impure, degrading, and base, and to decide intelligently and readily in respect to personal relations, obligations, and duties. The processes involved in such instruction being chiefly intellectual, the work is not peculiarly difficult for one who has a tolerably good knowledge of the natural activities of

the child's mind, and of the avenues of approach to the sensibilities.

That part of the teacher's work which has to do with the creation of a permanent disposition to choose the good rather than the bad, to do the right when the right is understood, to postpone a present pleasure for a distant advantage, to place duty above and before the gratification of appetite and passion, to hold fast to honor and integrity at the sacrifice of apparent personal pecuniary gain, and to regard the interests and rights of others as equally sacred with one's own, is more difficult and perplexing, and requires much more of care, skill, and practical wisdom. This is essentially the development and training, or in a word the culture, of the will. This culture cannot be carried on apart from the culture of the other forms of psychical activity. The will is not some mysterious power distinct from the rest of the mind. It is a complex mode of mental action inseparably connected with the process of knowing and the susceptibility of feeling. We know, we feel, we will; the direction of the willing is determined by the direction of the knowing and the character of the feeling. On the other hand, the direction of much of our thinking and the nature of our feeling are largely determined by the action of the will.

The One Purpose. — Consequently the acquisition of knowledge on the part of the child, and the creation of a right disposition, must proceed together; and the efforts of the teacher will embrace both objects, so combined as to constitute, in fact, but one purpose, that is, the right moral education and training of the pupil.

The Beginning. — The processes, methods, and steps in this education and training will be better under-

stood if we commence, or suppose ourselves to commence, with the child at the very beginning of conscious life. Some steps in this work were briefly indicated in chapter vi., but the importance of the subject will be a sufficient apology for a repetition, in a different connection, of some things there stated without much elaboration.

At first, Germs only. — Like all the other psychical activities, the moral powers exist in the young child only as germs and possibilities. These germs undoubtedly unfold and expand a little earlier or a little later, according to the environment, according to the efforts of parents, and the warmth or chilliness of the moral atmosphere in which the child is enveloped. If the atmosphere is warm, the unfolding is hastened; if it is cold, the opening is retarded. Without doubt, however, under the most favorable conditions, considerable time elapses, after the awakening of consciousness, before the intuitive idea of a distinction between right and wrong appears in the mind, or any notion of a law of conduct apart from one's own impulses. The child at this period can have no conception of relations, rights, or duties. Its behavior has no moral aspect or coloring.

First Discoveries in Connection with Conduct. — Very early — how early it is impossible to determine positively — the child discovers that the mother, or whoever has charge of it, approves some conduct and disapproves other conduct. This discovery is made almost instinctively and probably nearly or quite unconsciously. The tones of the mother's voice, her smiles and frowns, her movements, her manner in handling the child, — all these are interpreted, perhaps unconsciously, as indi-

cating approval or disapproval, pleasure or displeasure. Presently the discovery is made that some kinds of behavior are connected or closely followed, not alone by evidences of disapproval and displeasure on the parent's part, but by more or less of personal discomfort and pain; while different behavior is attended both by signs of approval and pleasure on the part of the mother, and by personal comfort and satisfaction.

Associations Made. — These conditions having been regularly and constantly repeated for considerable time, the child makes a permanent double association. It associates one sort of conduct with the mother's approval, and also with its own comfort and satisfaction; another and different sort of conduct is associated with the mother's disapproval and displeasure, and likewise with personal discomfort and pain. The associations will be formed only on condition that the treatment of the child is entirely uniform. If the same conduct is followed at one time by one result and at another time by a different result, no law of sequence can be discovered, and consequently no association of cause and effect, of behavior and its natural results, can possibly be made. The mind of the child is of necessity kept in a state of confusion and uncertainty; no relations between things can be perceived; no motive for conduct can be discovered; and consequently no training of the will can possibly take place.

Motives to Conduct. — If, on the other hand, perfect uniformity and consistency are maintained in the management of the child, the associations just spoken of are formed, relations between cause and effect, conduct and consequences, are clearly perceived, and motives are discovered which begin to act with some force upon the

unfolding power of self-direction, the will. One motive is the instinctive desire or impulse to seek personal comfort and satisfaction; the other motive is the instinctive desire for the approval of the mother, indicated by tones of voice, smiles, and other means. It is not necessary to suppose that the child, at first, is distinctly conscious of these instinctive impulses, but it is obvious that they are active forces in determining conduct at a very early period.

Law of Conduct. — Gradually the child becomes aware of a law of conduct outside of itself, and altogether distinct from its own spontaneous impulses and inclinations, and begins to render obedience to this law, — an obedience into which something of the voluntary element enters as a result of the action of the motives previously mentioned. This law is the will of the mother, expressed by language and by signs of various kinds, which the child soon learns to interpret if they are employed uniformly and consistently. The obedience of the child will not, at this stage of development, be regular and ready; other native impulses and inclinations will come into sharp conflict with the instinctive impulses which make for obedience to the newly recognized law. The result will be frequent outbreaks, more or less violent, of rebellion against external authority. It is of the highest importance to moral culture, and to the training of the will, that the parent or teacher deal wisely and prudently with these outbreaks. Anger and passion must be met, not by answering anger and passion, but by calm and steady firmness and decision. The result of such contests should leave upon the mind of the child the conviction that law is fixed and unvarying, and authority irresistible and imperturbable.

Idea of Right. — At the period of development now under consideration, the child probably has no idea of moral right or wrong in his own conduct or in the requirement of the law imposed upon him. He is, nevertheless, learning his first moral lesson, — the lesson of obedience to rightful authority, under the impulse of the only motives which he is capable of comprehending. If the exercise of authority is wise and uniform, the habit of obedience is rapidly formed, which renders submission much easier and more constant. Within a brief time the growing force of habit is added to the other motives which impel to such conduct as the law of the mother's will demands. Consequently three impulses are now operating upon the child to produce obedience: the desire of approval, the desire for personal comfort, and the force of habit.

It is probable that at about this stage of development the child begins to be dimly conscious of the intuitive idea of right, of a distinction between kinds of conduct, and that moral perception and judgment commence to manifest a slight and hardly observable activity. Proper instruction and training and favorable surroundings will tend to hasten the growth of these powers.

Forces now Acting to produce Right Conduct. — The child's moral law, if the term "moral" can be used here, is still the will or commands of the parent. Conformity to this law brings pleasure; nonconformity brings discomfort or pain. The forces now acting upon the child to insure obedience are the desire of approbation, the desire of personal comfort, the growing force of habit, probably a feeble desire, just beginning to manifest itself, to give pleasure to those with whom he is associated, and a weak impulse to do or not to do certain

things, arising from a still indistinct idea that some things ought to be done and other things ought not to be done. The feeling is that of obligation to conform to the requirements of law because these requirements ought to be obeyed, or in other words because they are right. It is granted that this feeling is, at first, very weak and not well comprehended, but its strength increases with a good degree of rapidity, and its nature soon becomes pretty clearly understood, provided the child is subject to wise instruction and judicious training. The feeling of obligation is necessarily attended, or immediately followed, by feelings of self-approval and conscious satisfaction, or by feelings of self-condemnation and dissatisfaction, according as there has been obedience or disobedience to the requirements of law, that is, the will and commands of parents or others in authority. The impulsive action of conscience attends the action of the judgment. It insists that the decisions and directions of the judgment shall be regarded and obeyed. The activity of conscience is, for considerable time, fitful, weak, and easily overborne by the more imperative demands of appetite and passion. The disposition to consider self as the centre around which all other persons and things should revolve is still very strong. The egoistic feelings and impulses predominate over the altruistic during this early stage of development, and they can be restrained within proper limits only after the moral powers and the will have become more reliable and more uniform in their action.

At School Age. — The child has reached the stage of development just described at the time of entering school. His law of conduct is the will of the parent or of others in authority over him, as expressed by require-

ments and prohibitions. If the treatment of the child by the parent has been wise, reasons for requirements and prohibitions have been given as fully as the opening intelligence of the child could comprehend them, and such motives have been urged for conduct as would be likely to influence the will. Authority has not yet been relaxed to any appreciable extent, but the way has been prepared for throwing the child gradually more and more back upon the decisions of his own judgment, and for bringing him to discover that the law imposed upon him is not merely the arbitrary will of one stronger than himself, but rather an expression of what is necessary, profitable, and right in behavior. This state of mind will be more readily produced if the management of the parent or of the teacher, when the child has entered school, is such as to impress upon him the idea of superior wisdom and superior goodness in the parent or teacher. This idea, even though it be somewhat indistinct at first, awakens the instinctive feeling of respect and reverence, which has much influence upon the will. At this stage it is of the very highest importance that the character and conduct of those in authority be such as to command silently the respect and confidence of the child.

Forces impelling to Right Conduct. — The forces now impelling the pupil to right conduct are the love of approbation, the desire for personal enjoyment, the desire, not yet very strong, to contribute to the happiness of those who are contributing to his own enjoyment, the force of habit, the imitative propensity, the growing feeling of obligation to conform to the decisions of the moral judgment, and the feelings excited by obedience or disobedience to the demands of conscience;

that is, the feeling of self-approval and satisfaction following obedience, or the feeling of self-condemnation and dissatisfaction following disobedience. In addition to these natural impelling forces, some artificial rewards and penalties are usually devised to influence the determinations of the will. These, in order to be effective, must be unvarying and as nearly as possible in the nature of natural and unavoidable results of conduct.

Moral Education and Training in the School. — The work of the school should continue and supplement that of the home; and like that will consist of two parts, instructing the intelligence and forming the disposition, or unfolding and directing the judgment and training the will. The two purposes will be accomplished at the same time and by the same means. The conclusions of an instructed and enlightened judgment, re-enforced by the imperative demands of conscience, become the most effective forces for influencing the will in the right direction. The general nature of moral teaching and training in public schools, the basis of such instruction, and the ends to be attained were briefly outlined in chapter II. It remains to add here some suggestions of a practical character.

Absolute Authority Relaxed. — The efficiency of moral instruction and of will-training, after the child has reached such a degree of development that the judgment begins to act with some degree of freedom and reliability, and appeals can be made to conscience with a fair measure of success, depends very largely upon wisely relaxing the demands of absolute authority and leaving the child more liberty for self-direction. This process involves something of danger and must be conducted with a careful regard for times and circum-

stances. At first the child must be left to determine for himself under favorable conditions, must not be exposed to too strong temptations and allurements toward the wrong, and must not be compelled to assume a heavy responsibility by his decisions. Nor should the standard of conduct, at this period, be too severe and exacting; morality is, to some extent, relative, not precisely the same for the ignorant and the well-instructed, for the strong and the weak of purpose and will, for the child and the man. Failures and mistakes should be dealt with leniently and in the spirit of kindness, in such a way as to excite courage and hope rather than discouragement and despair. A skilful use should be made of motives adapted to the general character and condition of the child and to his immediate needs.

Injustice Done. — Injustice is very often done to children in the early period of school-life, as well as in the home, by magnifying the moral turpitude of their conduct. Offences, springing from thoughtlessness or carelessness, are attributed to deliberate evil intention and to wilful perversity of disposition. Probably the offence most frequently imputed to them unjustly is lying. It is assumed, apparently, that they comprehend the relation which should exist between things and words, between ideas and expression, as clearly and in the same way as the parent or the teacher. One with even a limited knowledge of the workings and contents of children's minds must have discovered that, at some stages of development they make very little distinction between what they actually see and hear and what they think or imagine; the thing imagined is as real to them as the thing seen or heard, and is described with as

much freedom and with no idea of deception. The essential element of lying is not present in such cases, and the charge of falsehood should not be hastily made. The duty of the teacher is to lead the pupil to discover, by examples and illustrations, the real nature of truth and truthfulness, the distinction between things actually perceived and things merely imagined, and the great trouble and inconvenience which result from confusing these and from describing what one has imagined as if it were a reality. Without doubt lying is very common among children, but it is not by any means so universal as some writers affirm. It is easy, by unwise management, to create a habit of lying in almost any child.

Children are quick to feel injustice and to resent it; and if they come to feel that they are charged by the teacher with falsehood or any other fault without good reason, and are treated as guilty when conscious of no intentional wrong-doing, the power of the teacher over them for good is weakened, if not entirely destroyed. Probably, human nature being what it is, mistakes in dealing with children are unavoidable, but it is better, if mistakes are made, that they be in the direction of mercy and charity rather than in the opposition direction. It is better to trust a pupil when he deceives than to distrust him when he is honest and sincere.

Reasons for Conduct. — In relaxing the demands of absolute authority, and leaving the pupil to choose for himself and to determine right and wrong by his own judgment, he must, of necessity, adopt some criterion or standard by which his judgment shall be guided. Always and everywhere, and in respect to all matters concerning which it is called upon to make conclusions, the judgment must have a standard of some sort, either

formally expressed or tacitly understood, with which to compare whatever it has to consider. If the child is asked or expected to judge of the right or wrong of his conduct in some particular case, he must have in mind a pretty distinct idea of the kind of conduct which ought to be pursued in such a case; this idea, or ideal conduct, constitutes the standard with which he compares, and by which he is guided in his decision. Conduct will sometimes concern mainly or exclusively the individual pupil himself, sometimes chiefly the parents and the home, sometimes companions and the school, at other times the community generally, and the State. In each case a standard will be required or an intelligent determination cannot be reached.

Standards of Conduct. — It is an important part of the teacher's work to aid the pupil to form gradually and intelligently correct standards for his behavior in all the various relations in which he must act. These several standards, combined and harmonized, constitute the moral law of the child; whatever conforms to this law is right, whatever violates this law is wrong, in his estimation. As the process of moral development progresses, this law will, from time to time, undergo modification; it will be made more exacting in its requirements, and will embrace more of the life and conduct in its scope. Many things which at an earlier period seemed to possess no moral qualities will, one by one, be brought within the province of the law, and be subjected to the searching scrutiny of the moral judgment and to the imperative demands of conscience.

The effort of the teacher should be to lead the pupil, as soon as possible, to discover that his rules of conduct, his moral law, is something above and beyond his

own personal pleasure and advantage, higher than the mere will of parent or teacher, or the customs of society; to discover that the requirements of the law are right and just in themselves, and, for this reason alone, should be regarded and obeyed. As instruction and development go on, the conviction becomes finally fixed in the mind that the fundamental laws of conduct are intuitive, self-evident truths, which only need to be clearly set forth and to be fully comprehended in order to be accepted as binding upon all human beings. In connection with this conviction, the feeling arises spontaneously in the soul that obedience should be rendered to these laws.

Basis for Instruction. — Thus a sufficient basis for necessary moral instruction is found in the intuitions of the soul itself, and the demand for obedience is reenforced effectively by an appeal to the judgment and conscience. The feeling of obligation, that is, the feeling that one *ought* to do, or not to do, is at once recognized by all normally constituted minds without hesitation or argument. But unfortunately, on account of the strong egoistic element and the clamorous demands of appetite and passion in the early period of life, a recognition of right and duty is not always followed by conduct in harmony with their claims. It will be allowable, therefore, to appeal, with caution and care, and according to the degree of development, to the motive of utility, to the advantages and benefits resulting from right doing to the individual himself, to his friends and associates, to the community generally, and to all men everywhere. The appeal is to this motive when the pupil is urged to be industrious and studious because he can thereby acquire wealth, secure a better

position in society, and gain for himself the means and opportunities for gratifying his desires generally.

Fundamental Principles. — The most important of the intuitive fundamental principles of morality just referred to, and from which specific rules for conduct in all human relations may be drawn, are: (1) the principle of *justice*, which requires that to every man shall be given whatever belongs to him, whatever he can claim by any law of nature or of society. These claims are his rights, and are the measure of the duties which others owe him. Whatever a man can justly claim of me, duty requires me to give him. (2) The principle of beneficence and good-will, which requires one to do good to all men, especially to those in need, as he has opportunity and means. (3) The principle of mercy and forgiveness which requires one to deal mercifully with those who have wronged him, to forgive injuries, and generally to do to others as he would have them, under like circumstances, do to him. These principles will commend themselves to every man's conscience, even though he may hesitate to accept them as intuitive propositions. They can easily be defended and supported on the ground of utility alone, and they are also in harmony with the teachings of revelation.

General Method of Teaching. — The wise teacher will not commence with formal statements of these principles to young children. These are general and abstract, while children can be interested only in the individual and concrete. Consequently the teacher in the primary grades will seek to lead pupils to discover a rule of right conduct for some particular relation in which they may be placed, by means of specific and individual examples of good conduct in a similar rela-

tion, or in a relation which involves essentially the same conditions and the same material for exercising the judgment and exciting the sensibilities. Advanced pupils, after much instruction through individual illustrations of the conduct appropriate to various relations in the home, the school, and elsewhere, and after many exercises in solving moral problems adapted to their degree of development, will of their own accord, and almost unconsciously, grasp and adopt these principles as concise expressions of general laws embracing a great number of particular cases. With much respect for those who entertain opposite views, I cannot avoid the conclusion that the moral instruction of advanced pupils should result in leading them to discover such principles and to fix them thoroughly in mind. This will not involve the useless discussion of abstract metaphysical questions concerning the ultimate basis of moral distinctions and the grounds of human responsibility.

More Specific Illustrations of Method. — Space will not permit a more extended discussion of this part of the subject. The remainder of the chapter will consist mainly of illustrative examples designed to suggest practical methods of teaching moral lessons.

First Moral Lessons. — The first duty of the teacher in the work of moral education and will-training is to make the ordinary routine of the school, all its regulations and requirements, its methods of instruction and government, its very atmosphere, contribute directly to the formation of certain habits which involve the elements of morality and virtue, and have much to do with the full development of a desirable character. The school should, without special lessons or special effort,

teach the virtues of voluntary and cheerful obedience to rightful authority, of regularity and punctuality in meeting all engagements and duties of every kind, of order and neatness in dress, in personal appearance, in the performance of allotted tasks, indeed in everything, of industry and economy in the use of time, of materials, and of opportunities; and the more altruistic virtues of kindness, courtesy, and politeness. The bringing together upon terms of perfect equality of children of all possible social conditions; the placing of these side by side in the class, each depending for his rank and standing in the school upon his own ability and his own merits, neither asking nor expecting favor on account of social position, or of nationality, or of political or religious faith, — all this teaches silently but most thoroughly some of the most needed moral lessons in sociology and political science, such as the equality of rights and privileges, mutual respect and forbearance, the recognition of a common humanity, notwithstanding the great diversity of external environments, and the inequality of the distribution of the gifts of fortune. These and other kindred virtues should be made visible to the pupil and inwrought into his soul by being embodied and represented in the person of the teacher and in the organization and administration of the school. The teacher and the school thus become perpetual, silent and yet eloquent object-lessons, appealing to the intellect, the heart, and the will of pupils. The most effective training of the will is, at the same time, secured by such appeals as circumstances may require to the highest motives children can appreciate, and by such demands in respect to study and conduct as will compel continuous and protracted, but not too

exhausting, application of the mental activities to one subject and in one direction.

Second Source of Moral Lessons. — Most branches of study pursued in the schools afford means and opportunities for moral lessons and moral instruction, either direct or indirect. Biography and history are especially full of the richest material for the most effective ethical teaching, all the more effective because incidental and informal. They present examples of the nobility of true manhood, of the value and power of exalted character, of the worth of true courage, integrity, honor, and truthfulness, of the beauty of unselfishness, of sacrifice of self for others, of patriotism and devotion to the interests of one's country, examples indeed of all the virtues which adorn human nature. These studies offer the very highest incentives to right conduct and to the formation of right character.

Geography is closely related to history, and, when taught by the best method, supplies abundant material for moral lessons which concern men as members of a great social and industrial organism. It shows the mutual dependence of mankind, the pleasure to be derived from friendly intercourse, the great advantages resulting from the exchange of productions, the beneficial effects of travel and of other means by which men come into more intimate acquaintance with each other. While this study does not diminish patriotism, it greatly increases the feeling of philanthropy; while it does not lessen the love of one's own country and one's own countrymen, it tends to kindle in the soul a genuine respect and regard for the inhabitants of other countries. Since the possibility of friendly and profitable intercourse between individuals or nations depends upon the possession

and exercise of such virtues as truthfulness, honesty, honor, forbearance, self-restraint, courtesy, and mutual respect, trust, and confidence, the study of geography furnishes occasions for lessons to inculcate these most desirable traits of character.

Geography combined with history may afford occasions for teaching other and higher lessons in the altruistic virtues. A knowledge of the moral degradation of the people of some countries affords the best possible opportunity for exciting the feelings of benevolence, charity, and general good-will, and for kindling the desire to improve their unfortunate condition. A knowledge of the social and political injustice under which some peoples are suffering gives occasion to call attention to the value of institutions which secure us against such injustice, and to arouse the sentiments of pity, sympathy, and compassion for the oppressed, and of a just indignation towards the oppressors.

Only very brief reference can be made to the moral lessons which other branches of study will suggest. Language and literature, including the matter of reading, will afford material scarcely less valuable than that furnished by history. Mathematics teaches especially the great value of settled and permanent principles of conduct and procedure, and of adhering to such principles even though they may sometimes appear to be leading to undesirable conclusions. The importance of entire accuracy in form as well as in substance, in the small as well as in the great, is inculcated in the most practical way. The natural and physical sciences, being much concerned with observation and experiment and with the discovery of things hidden from the careless and heedless student, teach the moral virtues of patience, of

continued attention, of earnest seeking for the truth, of self-restraint, of impartiality and accuracy in judging, of truthfulness in reporting and describing, of readiness to accept new truths and to abandon old theories and beliefs when proved to be false. More than most other branches of study, these sciences, dealing as they do with nature, have an æsthetic side. They open the mind to an appreciation and love of the beautiful, to an admiration and reverence for the wisdom and skill of the Author of nature, and thus help to develop some of the highest and purest characteristics of the soul.

It is evident from these illustrations that while the ordinary work of the school does not necessarily include, to any appreciable extent, moral education and training, it does afford natural and abundant opportunities for the most productive instruction and training in practical ethics. A large part of the best material for such instruction is found without going beyond the acknowledged province of the school, or outside the prescribed studies and text-books.

Other Sources of Moral Lessons. — Moral lessons may be taught, moral principles may be inculcated, and practical rules for conduct may be impressed upon children by means of stories, anecdotes, and simple narratives of various kinds adapted to the degree of development, to the immediate conditions, and to the special ends to be attained. Several somewhat elaborate schemes of this sort have been published, all of them containing much valuable matter and many suggestions which teachers will find profit in adopting and adapting to their own peculiar needs and circumstances. The most common order of procedure recommended is to commence with Fairy Tales, following these with Fables, and then mak-

ing use of stories selected from the Bible, from old Greek writers, and from some modern authors. These all furnish valuable material, but there is no psychological or other satisfactory reason for beginning with any one particular class of tales or stories rather than another. The only requirements are that the story shall be within the comprehension of the child, shall be of interest to him, shall bring out clearly and forcibly the particular lesson or truth which is to be taught, and shall not need to be interpreted and explained in order to elucidate the moral, so-called. The stories will furnish subject-matter for conversation between teacher and pupils, in which the moral principle taught should be applied to present conditions, present relations and duties. The application, however, should be made by the pupils rather than by the teacher. As a general rule it is better that the story should illustrate a virtue to be imitated rather than a vice to be shunned. This general principle, however, will not exclude fables and stories which illustrate the hatefulness and foolishness of such vices as deception, ingratitude, envy, jealousy, and others to which children are especially exposed. The fables of the "Shepherd Boy and the Wolf," the "Grasshopper and the Bee," and "Old Dog Tray" are of this kind.

Lessons in Maxims. — The lessons taught by the fables and stories should generally be embodied in brief and pithy maxims which may be easily committed to memory and readily recalled. The form which such maxims shall take, may, in most cases, be left to the taste of the teacher or to the preference of the pupils. The lessons of the fables just mentioned may, for example, be summed up in "A liar is not believed even when he tells the truth;" "A man is judged by the company

he keeps;" and "Idleness is the mother of want;" or other equally good forms may be adopted.

With Advanced Pupils. — The instruction of young children should be quite informal, and should not be confined to any special, pre-arranged order. The lesson for the day should usually be selected with reference to conditions existing at the time, to incidents which have occurred, and to the immediate needs of the school. In teaching more advanced pupils, pupils in the grammar and high school grades, it will be best to adopt and follow a regular order of topics, though not an order which cannot be departed from if circumstances suggest the desirableness of a change. No one particular order can be recommended; the same order will not be best for all schools, nor for any one school at all times. At one time a series of lessons may be arranged upon the duties included under the head of justice, at another time those included under the head of benevolence and charity, or under the head of mercy and forgiveness. Lessons may be taught upon duties to one's self, to the home, to the school, to associates, to the community, and to the State.

The moral lesson should not be ordinarily assigned to a definite time in the day nor to a fixed place on the program. Its value depends almost entirely upon its adaptation to the time and the circumstances. A time should be selected for such a lesson when the minds of pupils are open for the reception of the special truth which is to be presented; the manner of presentation should be natural, spontaneous, and such as to show that it is determined by present conditions and needs. Care must always be taken that the moral lesson does not degenerate into the mere formal and perfunctory

teaching of set rules of conduct to be held in memory, rather than of living principles to be planted as good seed in the soul itself.

Classes of Actions. — To the young child a large part of his conduct appears to have no moral quality; the idea of right and wrong is not associated with it; it is not praiseworthy or blameworthy. As the process of moral development and instruction goes on, more and more of this neutral conduct comes to take on an ethical coloring, and is assigned to a place among the positively good or bad, until finally very little remains to which moral qualities are not attached. It is sometimes profitable, in discussing questions of morals and conduct with advanced pupils to suppose acts and states of mind to be separated into three divisions: (1) those which in their very nature are right always and everywhere; (2) those which in their very nature are wrong always and everywhere. Leaving aside questions of mere casuistry, the discussion of which is usually both unnecessary and unprofitable, a large number of things can be grouped into these two divisions concerning the character of which there will be no differences of opinion among intelligent people. Every one will place in the first division obedience to legitimate authority properly exercised, truthfulness in word and act, honesty and integrity in business and in all relations of life, a careful performance of all domestic, social, and civic duties, purity of thought, of speech, and of life, feelings of gratitude, kindness, and good-will. These and many other things of similar nature are universally recognized as right and binding upon men.

Among the things which will, by common consent, be grouped in the second division, are disobedience to

rightful authority, stealing, lying, dishonesty and deception by whatever names disguised, ingratitude, envy, jealousy, hatred, revenge, and many other things of like character. (3) Things which, in themselves considered, appear to possess no definite moral qualities; they seem to have the hue of indifference and neutrality. One is not praised for doing them, nor blamed for leaving them undone. It is conceded that many of our daily actions, both in business and pleasure, considered by themselves apart from intentions, purposes, conditions, and surroundings, are of this sort. It is in relation to the right and wrong of these that wide differences of judgment are found among persons of equal intelligence and of equal moral excellence; and it is in respect to these that angry disputes frequently arise, that ill temper is exhibited, and that harsh and uncharitable judgments are pronounced. The reasons for such differences are usually found in the early home instruction and training, and in the immediate social and religious environment. Children naturally regard the domestic and social habits, customs, and practices of their own parents and near friends as right and proper. Consequently in estimating character and conduct it is frequently necessary to put aside, as much as possible, preconceived notions and pet theories and to suppose one's self in the place of another with his environment, education, and habits. The effort to do this will beget charity, mutual respect and forbearance, and remove the most serious obstacles in the way of harmony of judgment and action.

Basis of Judgment as to Things in the Third Division.— A little careful examination makes it evident that no one action of an intelligent and responsible being can

stand apart from all other acts. It has necessary relations to other acts and to other actors. It has antecedents and consequents. It must be estimated and weighed in connection with its relations, its surroundings, its causes, its purposes and results. Taken thus it cannot fail to assume moral qualities and to be worthy of praise or censure, and the actor must incur merit or demerit.

If these statements are admitted to be correct, a few obvious considerations will enable us to determine whether we ought or ought not to do many things which appear, at first sight, to be neutral in their character. These considerations may be stated very briefly.

(1) Things of this nature should be avoided if they would occupy time which belongs to other and regular duties.

(2) They should be avoided, even if they do not trespass directly upon time belonging to other employments, if they so exhaust strength and energy that we are unable to perform our legitimate work in the best way.

(3) Things morally indifferent should generally be shunned if they are in fact or in public estimation very closely connected with other things which are obviously evil in their nature and influence. The same rule will apply to persons as well as things. A man whose intimate associates are bad is not a desirable or safe companion, even though he himself may appear to be of good character. Everything which leads toward evil should be avoided.

(4) Employments and amusements, not in themselves positively bad, should be avoided if they are

calculated to develop and cultivate the lower and baser rather than the higher and nobler elements of one's nature. Every person is morally bound to make the best possible of himself and of all his powers, both for his own sake and for the sake of others.

(5) It is, under ordinary circumstances, expedient and wise to avoid things which we ourselves regard as morally indifferent, if the great majority of intelligent people with whom we are associated believe these things wrong in themselves or evil in their tendencies. It is unnecessary here to indicate the obvious and necessary limitations to this general rule.

(6) The altruistic law of benevolence and charity, if not the law of justice, requires us to avoid any manner of life, or any course of conduct, which will be likely to lead others into evil by force of our example. This law, also, has obvious limitations, but it will not often be necessary to inquire for these in school life or even in the outside world. It will be profitable occasionally to allow, and even to encourage, advanced pupils to discuss these general laws and to make application of them to their own conduct, to the conduct of historical characters, and to conduct which comes under their observation in business and in other relations of daily life.

Results Depend upon Motives. — The efficiency and practical value of moral instruction in the school as elsewhere will depend chiefly upon the creation in the soul of a permanent disposition to choose and pursue the right; that is, upon training the will to act habitually and uniformly in harmony with the impulse of the highest motives. In the entire education of the child, intellectual as well as moral, a constant effort should be made to lead him to comprehend and appreciate the force

of higher and still higher motives. The nature of the motive to which appeal is made should be elevated as development and intelligence advance. Space will not permit an extended and critical discussion of motives; a few suggestions only can be offered upon this topic.

Motives can be conveniently arranged into a few regularly ascending series, up which the child may be led step by step with greater or less rapidity according to his progress in development and according to surrounding conditions.

(1) **First Series.** — The instinctive desire for the pleasure, enjoyment, and satisfaction resulting from the consciousness of meriting and receiving approval, commendation, esteem, etc. This, as already stated, is probably the first motive to the influence of which the child is susceptible. This series begins with the desire for the approval and esteem of parents, and rises gradually till it reaches the desire for the approval of one's own conscience, of the good and noble, and finally of the Supreme Being, the Source of all life and of all good.

(2) **Second Series.** — The desire for the satisfaction and enjoyment resulting from the legitimate and proper exercise of one's own powers. This series begins with the desire for the pleasure which comes from the appropriate exercise of the bodily powers, rises to a love for the enjoyment which results from the exercise of the various forms of intellectual activity and of the sensibilities, and finally reaches a desire for the profound satisfaction which attends the right exercise of the moral and spiritual activities, the highest activities of which the human being is capable.

(3) **Third Series.** — The desire for the satisfaction and enjoyment resulting from possession and use. This series

begins with the pleasure which the child experiences from the possession and use of toys and playthings, and rises till it embraces the satisfaction resulting from the possession of esteem, power, wealth, knowledge, and the still deeper satisfaction attending the possession of true wisdom, of excellency of personal character, of full and complete development of the whole being, and of likeness to the perfect ideal of true Manhood. This series may be regarded as embracing the enjoyment of "the pleasures of hope," of anticipation, as well as of actual possession.

The Highest Motive. — The highest motive to which ordinary human nature is susceptible is a desire for the profound satisfaction which attends the doing of right simply because it is right, or the doing of duty just because it is duty; for the two things are essentially one and the same. The effort should be to aid the pupil to reach this high attainment, and to train the will to act constantly from this grand motive. This state of soul, in which the idea of duty is paramount, should finally grow into another and still higher condition, in which there is no conscious thought of duty, but only a feeling of intense delight in right doing. This is the state of mind indicated by the words "I delight to do Thy will," and, "It is my meat to do the will of Him that sent me." This state of mind can be attained only when all conflict of desires ceases, and when desire and disposition come into entire harmony with each other and into complete agreement with the conclusions of an intelligent moral judgment.

FOR READING AND REFERENCE.

Adler's Moral Instruction of Children.

Hyde's Practical Ethics.

Everett's Ethics for Young People.

Seelye's Duty: A Book for Schools.

Gilman and Jackson's Conduct as a Fine Art.

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Pedagogical Seminary, vol. ii. p. 72: Moral Education and Will Training.

Janet's Elements of Morals.

Compayré's L'Évolution de L'Enfant, chapitre xiii.

Bowne's Introduction to the Study of Ethics.

Parker's Talks on Pedagogics, chapter xiv.

Morgan, T. J., Studies in Pedagogy, chapters vi. and viii.

Robinson's Principles and Practice of Morality.

CHAPTER XII.

PERSONALITY IN THE TEACHER.

Three Things necessary. — Three things are necessary to the greatest efficiency of the work of the teacher.

The First. First, a thorough knowledge of the branches to be taught. This knowledge should extend far beyond the limits which his pupils are expected to reach while under his instruction. He should know much more than he is required to teach of all subjects embraced in the curriculum of school studies. The more he has of what is called culture, the better.

This important requisite of the teacher's outfit is strongly emphasized in all higher institutions of learning. Not seldom it is allowed to outweigh all other considerations, especially in the selection of instructors for special departments. It is readily conceded that due regard must be had for this in the choice of teachers for the lower schools, even for the primary grades, but it should never be made the sole test of fitness.

The Second. The second thing necessary on the part of the teacher is a knowledge of the fundamental principles of the science of education and of the application of these principles to methods of teaching. This requisite for the teacher's calling is likely to be sufficiently insisted on by normal schools and other institutions of

similar character. Its importance will not be questioned by any one familiar with the methods and devices often employed, especially in elementary schools. Yet it must be admitted that the practical value of particular methods may be greatly over-estimated, and that instruction in these may be carried to such an extreme as to destroy all individuality and to reduce the teacher very nearly to the position of an "organ-grinder."

Other things being equal, a teacher instructed in principles and trained in methods is much to be preferred to one who has merely a knowledge of the subject-matter to be taught, and a fair degree of general culture. When possible both should be combined, but even the possession of both these requisites, essential as they are, does not fit one to do the very best work in the school-room. Something more is needed.

The Third. The third requisite in the order adopted, though first in importance, is genuine *personality.* The term personality as here employed includes everything which can be expressed by the words individuality and character, if any one prefers these words. Most especially personality is used to denote the influence, force, or power, which one exerts, or may exert, in consequence of his individuality. It is the result of individuality rather than mere individuality alone. This meaning agrees with common usage; we generally speak of personal responsibility, personal influence, and so on, instead of individual responsibility and influence.

W. H. Payne. — These three elements which, combined, constitute the substance of the teacher's preparation for his high office, and their relative importance, are well described by Dr. W. H. Payne, from whose remarks I make selections. He says, —

"It is plain that the very first requisite of the teacher is a competent knowledge of subjects. In our day there is such insistence on method, as distinguished from scholarship, that we are in danger of underestimating the importance of high scholastic attainments. In the earlier day scholarship was everything, method almost nothing; and the natural recoil from this error has induced an exaggerated belief in method as some substitute for scholarship.

"After scholarship, the thing of next importance is method. Two teachers of equal attainments may stand to each other in real force as ten to one, the difference being due to high and low qualities of method. I use this term to cover all the processes of the school-room, — organization, government, and instruction.

"So far we have been dealing with the matter and the method of the teacher's outfit, — the body, so to speak, of his professional self. But this body must be animated and inspired by a spirit. I am now speaking of something which cannot be articulately described, but of something of which we are all conscious when we think of a real teacher and his work. Grant to the painter his palette, his brushes, his paints, and the formal rules of his art, but with only these things he is merely a mechanic. What will transform this mechanic into an artist? Fair ideals, a divine sense of beauty, and a conception of the possibilities of art. It is only under the domination of this spirit that the artist becomes a creator. Now, what I wish to say is that by some means a spirit akin to this must be infused into a body of scholars, in order that they may become teachers. There must be some ideal to serve as the goal of one's effort; some sense of the sacredness and grandeur of the teaching office, and a conception of what is possible through the resources of the teacher's art. This change of spirit and of purpose is so marked that sometimes, in speaking of it, I have ventured to call it conversion. . . .

Matter, method, and spirit, these are the three things without which no work in teaching even of tolerable excellence, can be done. They must accompany all true teaching; and while they form the minimum of one's professional preparation, they are the permanent endowment of the most accomplished teacher. Other elements may be added, but these are constant."

This spirit is an essential part of the teacher's personality, an intangible something which gives color and tone to his life, direction to his effort, and makes his attainments peculiarly his own, and instruments by which he accomplishes, in his own way, a work which, in its details, no other person can do.

D. P. Page. — Speaking of the personal spirit of the true teacher, Mr. Page, in his incomparable book, itself the product and embodiment of such a spirit, says: —

"I would by no means undervalue that degree of natural talent, of mental power, which all justly consider so desirable in the candidate for the teacher's office. But the true spirit of the teacher, a spirit that seeks not alone pecuniary emolument, but desires to be in the highest degree useful to those who are taught; a spirit that elevates above everything else the nature and capabilities of the human soul, and that trembles under the responsibility of attempting to be its educator; a spirit that looks upon gold as the contemptible dross of earth, when compared with that imperishable gem which is to be polished and brought out into heaven's light to shine forever; a spirit that scorns all the rewards of earth, and seeks that highest of all rewards, an approving conscience and an approving God; a spirit that earnestly inquires what is right, and dreads to do what is wrong; a spirit that can recognize and reverence the handiwork of God in every child, and that burns with the desire to be instrumental in training

it to the highest attainment of which it is capable, — such a spirit is the first thing to be sought by the teacher, and without it the highest talent cannot make him truly excellent in his profession."

Dr. Arnold. — In this connection the words of Dr. Arnold, the great master and teacher of Rugby, are peculiarly appropriate. In writing of the qualifications of a teacher whom he wished to employ, he said, —

"What I want is a man who is a Christian and a gentleman, an active man, and one who has common-sense and understands boys. I do not so much care for scholarship, as he will have immediately under him the lowest form [class] in the school; but yet, on second thought, I do care about it very much, because his pupils may be in the highest forms [classes]; and besides, I think that even the elements are best taught by a man who has a thorough knowledge of the matter. However, if one must give way, I prefer activity of mind and an interest in his work to high scholarship; for the one may be acquired far more easily than the other. . . . The qualifications which I deem essential to the due performance of a master's duties here may in brief be expressed as the spirit of a Christian and a gentleman, . . . he should study things 'lovely and of good report'; that is, he should be public-spirited, liberal, and enter heartily into the interests, honor, and general respectability and distinction of the society which he has joined."

It is by means of his individuality and personality that the teacher comes into intimate relationship with his pupils, touching and warming by his own spirit, by his real self, the spirit, the real self, of the scholar. The lack of such contact of heart with heart, of life with life, is one of the most serious defects of the school systems and school arrangements of our time.

A College President. — A distinguished college president, a man of long experience and much observation, writes: —

"I cannot help feeling in view of my own college course, and of all that I have seen since then, that the great defect of the past and the present education lies in the want of personal and individual intercourse between the teacher and his pupil — immediate contact of the mind of the former with the mind of the latter — in such a degree as is to be desired for the pupil's highest inspiration. Our system of education, which has been growing in popularity of late in all our higher institutions of learning, places the student far too much in a kind of great machine, where his individuality is lost in the working of the machinery. It is the mind of the man which we need to develop, and to this end something more than text-books and examinations are necessary."

Another College President. — Another eminent president of a great university, in writing of his early education, says of one of the schools in which he studied:

"In this private school, as in district schools, there was little attempt at classification; in teaching arithmetic, algebra, and surveying, none at all. Each pupil advanced as rapidly as he could. The teacher came round at least twice in the day to inspect the work done on the slate, to ask explanations, and to remove difficulties. The instruction was thus emphatically personal. The teacher reached each one of us individually, and adapted his instruction to our respective needs and peculiarities. . . . Is it so clear as some think that the classification of students, however carefully arranged, yields better results than this personal method of instruction? Of course, this personal method is possible only where the number of pupils is small."

Speaking of a particular teacher, he continues : —

"Contact with this inspiring teacher formed an epoch in my intellectual life, as in that of many other boys. . . . There was such a glow of enthusiasm in the instructor and in the class, there was such delight in the tension in which we were kept by the daily exercises, that no task seemed too great to be encountered."

In describing the character of another eminent instructor, after speaking of certain intellectual traits, he goes on to say : —

"There was, too, beyond all this, a certain power of personal presence, a force of character, a moral strength, which lent a tremendous weight to even his commonest words. I have met in my day not a few distinguished men ; but I recall none who have so impressed me with the power of personality, none who have uttered so many wise words which I recall every week to my advantage and help in the duties of my daily life."

Value of the Teacher. — The one great truth emphasized in these quotations is that the teacher is the essential factor in the school, and that the most essential factor in the teacher is personality and character. This truth needs now, perhaps more than ever before, to be emphasized. In the estimation of not a few who have to do with educational affairs, grand buildings, elegant furniture, costly apparatus, and great libraries constitute the school. With others, improved courses of studies, carefully arranged programs, exact grading and classification, and timely promotions are of almost supreme importance. No practical teacher will underestimate the value of these things; they are exceedingly desirable. But they are not the school;

they may all exist, and the school, so-called, may be worthless. The old and trite saying, "As is the teacher so is the school," has in it a large measure of truth.

Superintendent Howland. — Superintendent Howland, in his "Hints to Teachers," presents an estimate of the value of the personal influence of the true teacher based upon his long observation in the schools of a great city. He says: —

"As all roads lead to Rome, so from whatever point or on what line soever I proceed, my thought always brings me at last to the teacher, on whose fitness and fidelity the efficiency of all these forces depends. First of all her qualifications is that wholesome personal influence, still unexplained by the philosopher, but read by the veriest child, — that something which embraces the will of the new-comer, makes it subservient to her desire, and leads him unconsciously along the path of duty, and brings him into harmony with the conditions of the school-room. It inspires him with a self-respect and pride in his school, and encourages him to the performance of otherwise irksome tasks. . . . Under her guidance labor becomes a pleasure, and the irksomeness of restraint takes on the garb of joyous compliance with the wishes of a trusted guide. Harshness and severity are unknown, because unneeded; censure has changed to loved counsel; and willing, earnest effort, little by little, takes the place of forced and unfruitful toil."

E. E. White. — The influence of the personality and character of the teacher in the control of the school is well described by Dr. White in his "School Management." He says: —

"The most vital element of governing power in a positive moral character and life. We thus come back in our

analysis to the one essential fact of the school, the *teacher*; and we reach the one essential fact in the teacher, *character*. Through all the methods and measures of the school must run the vitalizing influence of the teacher's inner life. This is the one element of power that can touch the heart and conscience of pupils with an inspiring inner influence that makes outer control unnecessary. It is a mistake to suppose that moral influence and character can be divorced. We might as well attempt to separate the stream from the fountain. . . . If the writer had the power of making one law for the governing of American schools, and only one, and this in a single sentence, — a law to be written over every school-room door, — he would have little difficulty in determining what it should be. It would be in about these words: No man or woman shall enter here as a teacher whose character and life are not fit models for the young to copy."

Personality put forth. — The teacher, like every other individual, puts forth the influence and power of his personality both consciously and purposely and also unconsciously and without deliberate intention. Personality is spontaneously, but still consciously exercised in the work of instruction. Fundamental principles of education and teaching are the same always and everywhere, in all classes and in all grades of schools. But the teacher's individuality and personality will determine the manner in which these shall be applied in any particular case. When teaching the same subject, the lesson while presented by one teacher will not necessarily be precisely the same in form, though it may be in substance, as that of another teacher; the analysis prepared by the one may differ from that prepared by the other, and still there may be no violation of any law of pedagogy by either instructor. Person-

ality will appear in the selection of material for illustration and in the use of this material; in modes of explanation; in the employment of contrivances and devices; in the form of questions and in the manner of questioning; and in a great variety of other things involved in the management of the school.

Freedom Desirable. — The attempt sometimes made by instructors in methods and by superintendents of schools to secure entire uniformity in the work of a number of different teachers results in the production of a mere mechanical sameness. Uniformity may be attained, but in many cases the indwelling soul which gives life, interest, and efficiency to teaching has disappeared. As far as possible the teacher has been transformed into an automatic machine, and works with much of the same spirit and interest with which any other machine works.

The fact is recognized that in large schools, or in a system of related schools where many teachers are employed, a considerable degree of uniformity is necessary in a few things; is probably desirable in some other things; while in many matters it is not necessary and perhaps not even desirable. Teachers in subordinate positions should be held responsible by superintendents and others in authority for *results*, should be required and expected to secure certain ends, to accomplish an assigned amount of work in various branches of study, but should be allowed all possible liberty in the selection and use of means and in methods of working. By such an arrangement due respect is paid to the teacher's judgment and individuality, all desirable freedom of action is permitted, and the power of personality has room to do its best service to individual pupils and to the school as a whole.

Unconscious Action of Personality. — The personality of the teacher does much of its most effective and most fruitful work without conscious effort or purpose on his part. This work is what Dr. Huntington, in his beautiful essay, calls "unconscious tuition," "that part of the teacher's work which he does when he seems not to be doing anything at his work at all." The child receives the influence as unconsciously as the teacher exerts it. The one moulds and fashions, and the other is moulded and fashioned, and the work moves along so silently that neither knows what is going on till the transformation is accomplished. Everywhere this giving and receiving is taking place; and everything that gives, gives of its own real substance and nature; it cannot do otherwise. The sun gives its light and heat, the rose its odor, the lily its fragrance; the good, the true, the beautiful in nature, in art, in human life, send forth goodness, truth, and beauty. They fill the atmosphere about them with light, and warmth, and sweetness.

In accordance with this universal law the teacher's personality pours over into the soul of childhood the very essence of his own inner character, his real self. To the extent of his power he recreates the pupil in his own intellectual and moral image, and sends him out as his representative into the world. It is this fact that adds weight to the responsibility of the instructors of children, and equally to the responsibility of the officers charged with the duty of selecting teachers for the public schools.

The Real Question. — The question with such officers should be not merely, How much does this candidate for a position know of the things to be taught, how high marks does the examination give in the various branches,

what recommendations has she received from accommodating committees and well-wishing friends? but rather, What is the real character of the person; what natural and acquired tastes, what dispositions, what personal characteristics has she? It may even be inquired, What is the personal appearance, the dress, the general bearing of the individual? All these things enter into the personality of the teacher and help or hinder her in the work which should be done. They are all potent factors in the silent influence which she will exert.

M. Compayré, in discussing the subject of government and discipline, says: —

"The physical qualities of the teacher are not themselves to be despised as an instrument of discipline. Form, physiognomy, and voice play their part in well-conducted schools. It is useless to insist on those qualities which depend wholly on nature; but what an earnest purpose can control are the general bearing of the body, the appearance of the face, and gestures. But physical qualities are of little account compared with moral qualities, which are the principal element of authority. By dint of patience, energy, and activity, a teacher, even physically uncomely, may acquire a real ascendency over his pupils. The teacher is not truly worthy of his name of master, except when he masters his school by the ascendency of his moral authority. External and in some sort mechanical means of discipline are worth nothing, unless they are seconded by the moral force which only good teachers possess; and in schools where this moral authority is well established they become almost useless."

Manners. — One of the most important elements in the effective working power of personality is found in the manners. I do not mean by manners simply certain formal and conventional modes of movement and behavior

regarded as appropriate to times and places, which may be altogether artificial and meaningless, and may be put on and laid off at pleasure. I mean rather a behavior which is the natural outgrowth and expression of the thoughts and feelings; which embodies, in form and action, the highest and best impulses of the soul; which signifies genuine courtesy, kindness, charity, and good-will; which cannot be adequately described in language, but can be felt in every nerve of the body and in every susceptibility of the soul.

Upon this point I make some extracts from Dr. Huntington's essay previously referred to. He says: —

"Another of the silent but formative agencies in education is that combination of physical signs and motions which we designate in the aggregate as *manners*. Some one has said, 'A beautiful form is better than a beautiful face; but a beautiful behavior is better than a beautiful form. It is the finest of the fine arts.'

"Manners are a compound of form and spirit, — spirit acted into form. The reason that the manner is so often spiritless and unmeaning is that the person does not contain soul enough to inform and carry off the body. Manners also react upon the mind that produces them, just as they themselves are reacted upon by the dress in which they appear. Then there is a connection more sacred still between the manners and the affections. They act magically on the springs of feeling. They teach us love and hate, indifference and zeal. They are the ever-present sculpture-gallery.

"Whoever imagines legitimate manners can be taken up and laid aside, put on and off for the moment, has missed their deepest law. Doubtless there are artificial manners, but only in artificial persons. A noble and attractive every-day bearing comes of goodness, of sincerity, of refinement. And

these are bred in years, not moments. If lofty sentiments habitually make their home in the heart, they will beget, not perhaps a factitious and finical drawing-room etiquette, but the breeding of a genuine and more royal gentility, to which no simple, no *young* heart will refuse its homage. Children are not educated till they catch the charm that makes a gentleman or a lady."

After having dwelt at some length upon several of the channels through which the influence of personality flows out from one soul into another with its transforming power, he concludes by declaring: —

"After all, however, there is a total impression going out from character, through the entire person, which we cannot wholly comprehend under any terms, nor grasp in any analysis. We now and then meet a person who, we cannot tell how, by the mere magnetism of his being, kindles our enthusiasm and liberates our faculties. . . . Nor need it cast any suspicion on this doctrine that it implies a power acting which we cannot shut up into definitions; certainly not as long as we are born out of one indefinable mystery and die into another. It is a property of man, no less than of even material things, that he carries along with him more than can be measured by his literal dimensions."

While other things are necessary, it may be affirmed, without fear of successful contradiction, that this wondrous but incomprehensible power of personal character is the most essential element in the teacher's preparation for his work. It may be coveted without blame, since we are exhorted to "covet earnestly the best gifts." Every teacher who seeks the highest success and the highest usefulness, should strive to acquire it; for while, in its perfection, it is largely a

gift of nature, yet, like all human excellences, it may be attained, in good measure, by patient and long-continued effort.

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Howland's Practical Hints for Teachers, chapters ii. and vii.

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White's School Management; topic, The Teacher as Governor.

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Arnold's Waymarks for Teachers; topic, Talks on School Subjects.

CHAPTER XIII.

SELECTION AND ARRANGEMENT OF STUDIES.

THE general principles which should govern the selection and arrangement of courses of studies were stated in a previous chapter.

The subject, however, is of so much practical importance that it may properly receive a little special consideration.

Condition Years Ago. — Fifty years ago the courses of study in the ordinary public schools, if courses could be said to exist, were very simple. They embraced scarcely more than the traditional three R's, — reading, writing, and a little of arithmetic. In some cases grammar had been introduced and a very small modicum of geography.

Additions. — Additions have been made, from time to time, to these primitive studies until the curriculum of many of the schools is over-crowded with a great number of unrelated subjects, arranged with little or no regard to logical or psychological order. No effort has been made, in most cases, to correlate or coördinate the different branches of study.

A Serious Evil. — The evil has become a serious one, and is felt in several directions. In the first place the mental energy of pupils is dissipated by being turned, for a little time, now upon one subject and now upon

another, without being thoroughly concentrated upon anything.

Very little genuine mental discipline is secured, and no real mental power is acquired under such conditions.

In the second place the knowledge obtained is altogether superficial and "scrappy"; no one subject is thoroughly mastered. No proper conception is formed of the relation of one branch of study to other branches, or of one truth to other truths, or even of one fact to other facts in the same department of study. The acquisitions of knowledge, if what is learned may be dignified with the name of knowledge, are not converted into a homogeneous, consistent, properly articulated whole. The student, going out into the business of the world, finds himself unable to make use of what he calls his knowledge for practical purposes; his supposed resources prove not to be available when they are most needed. Naturally enough there is a rapidly growing dissatisfaction with this condition of affairs. No class in the community is more dissatisfied than the teachers in the schools. They know better than any one else can know how much of hard work, both of teachers and pupils, goes for almost nothing on account of this chaotic state of the school curriculum.

Remedies Suggested. — First Remedy. — Several remedies have been suggested. A few persons, who are fully persuaded that "the former days were better than the present," advocate a return to the ancient simplicity, and advise the removal from the courses of studies of pretty nearly everything except the sacred three original branches. This proposition, however, finds favor with only a small portion of the friends of public education. Evidently relief cannot be looked for in this direction.

Other Remedies. — Two other sources of relief for this evil have been suggested, though the two may, to some extent, be united. The first source is found in the *concentration* of studies; the second, in the *correlation* or *coördination* of studies.

Concentration. — The doctrine of concentration is, in substance, that some one study should be selected, as the core or centre of all instruction, and that other branches of study should be subordinated to this central subject, should radiate from it as spokes from the hub of the wheel, or should cling to it as "iron filings to a magnet." The advocates of this doctrine emphasize strongly the fact that studies may be, and naturally are, divided into two groups or classes; first, real or thought studies, those studies which contain the subject-matter or substance of knowledge; and second, formal studies, those studies which simply give embodiment, form, and expression to the subject-matter, the ideas and truths found in the real studies. Reading, writing, language, grammar, drawing, and all other branches concerned merely with the expression of thought, in any form, are called formal studies.

The central core must be a real study; the formal studies must be completely subordinated to this, must be considered only so far as they are necessary to the understanding and expression of what is found in the real study. When a fact, a thought, or a truth is discovered and grasped by the mind, it will seek some form of expression. The child will struggle to represent, in some way, his thoughts and feelings to others. Under the impulse of this desire he naturally and spontaneously learns to talk, to read, to write, to draw and paint. The formal studies, therefore, may be relegated to a very

subordinate place in the school curriculum, and the main labor of pupils may be given to the few real studies. Under this plan, while reading, spelling, writing, and language would still be taught in the schools, they would be taught in connection with real studies and would hardly have a separate place on the program, or occupy any special time of their own.

Under exceptionally favorable conditions it may be practicable to arrange a curriculum for a small school by concentrating all the studies around some single central core; but for the present, at least, this plan cannot be adopted in the ordinary schools. No single subject can be found around which all other subjects of instruction will naturally group themselves into a position of subordination.

Correlation and Coördination. — The doctrine of coördination proposes to arrange the various studies of the school courses along two or three pretty distinct lines, making as frequent connections as possible between the separate lines, and keeping the work of each line in close touch with that of the other lines, so that the rate of progress shall be uniform in all departments of instruction. The lines of study are to be so firmly united that the final outcome shall be a consistent whole of thoroughly assimilated knowledge in the mind of the pupil.

One line of studies will consist of history, literature, and kindred subjects. This line is concerned with the works and thoughts of man, and may be called humanistic.

Another line will consist of scientific studies, both physical and biological, and will include geography and kindred subjects.

A third line, in some respects subordinate to the other two, but in the main coördinate, will be made up of mathematics and closely related subjects.

The formal studies, reading, spelling, writing, drawing, and so on, will be readily united with the first and second lines without making a distinct group. The ethical aspect or purpose of education will be provided for in the humanistic line of studies, and the practical, business aspect will receive all necessary attention in connection with the scientific and mathematical lines.

Selection and Arrangement of Studies. — It remains to inquire what considerations or principles will guide in the selection of the material of these courses, and in determining the order in which this material shall be arranged. Either one of two orders of arrangement may be adopted, the logical or the psychological; that is, the order required if only the relation of the studies to one another is regarded, or the arrangement required if the order in which the psychical powers of the child are developed is considered. Studies for mature minds should undoubtedly be put in logical order; it is equally certain that the psychological order should be adopted for the child.

Culture Epoch Theory. — Accepting the psychological order as the true one for young children, some of the writers who adopt the theory that the child, in his development, passes successively through intellectual and moral stages corresponding to the stages or epochs through which the most advanced portion of the human race has passed in reaching its present elevation, insist that the humanistic line of studies should be selected from the literature of the successive "culture epochs" so-called. Courses of instruction have been carefully

arranged in accordance with this theory by some German educators. Commencing with fairy tales, myths, and legends, the course gradually emerges into the realm of genuine biography and real history, and of corresponding literature.

There is a certain fascination about this theory, a pleasing degree of probability, and a considerable measure of truth; but as a working basis for the selection of material for consecutive courses of instruction it is open to serious, if not fatal, objections.

Objections. — For some valuable ideas upon this point I am largely indebted to Lange's work on Apperception. Freely admitting the marked similarity between the development of the individual and the evolution of the race, it is easy to make too far-reaching inferences from this by leaving out of account some very important considerations.

The child is born into a certain stage of civilization; this civilization is his inheritance. One of the high purposes of education is to put the child into full possession of this rich inheritance at the earliest practicable period of his life. The race has struggled for ages to accumulate this inheritance of history, literature, art, and science. It has gone through many and bitter experiences. Must the child of to-day necessarily struggle in the same way and have essentially the same experiences? May he not reach the goal by a much shorter and more direct path?

"Even if the individual apperceives and appropriates the knowledge and experience given in the process of human development just as the race did, it by no means follows from that that this must happen in exactly the order of progression in which the culture-matter was gradually evolved. The case

is conceivable that the individual mind, avoiding the circuitous race development, apperceives the experiences of the race according to other and to him better suited points of view."

Individual development and race development must differ in many important respects, on account of differing conditions. The child of to-day is born into the environment of the present age; his development commences when this environment begins to touch his soul through his physical organism. His sensations, perceptions, thoughts, and feelings are all of the present; and though his mental progress may correspond stage by stage with that of the race, his experiences at any given period will be as unlike those of the race at the corresponding period as the experiences of a child in the wilds of Central Africa are unlike those of the child in an American kindergarten.

"It is obvious, moreover, that the child, during the periods of school life, can pass through only a part of the culture-epochs, and for this reason the selection of material for study cannot be based on the asserted correspondence of race and individual development; for otherwise the most valuable culture-matter would have to be withheld from the great majority of the public-school pupils, who leave school as early as the fourteenth or sixteenth year. The thought, therefore, of arranging the subject-matter of instruction in genetic order must be regarded not as a sole and universally valid principle, but one to be taken into account along with others."

"It is evident that true pedagogical principles require, first of all, that the matter to be taught must, on the whole, lie close to the child's experience. This experience has its roots in the soil of one's home, of one's native neighborhood, in one's native country. The material of study must be selected with

reference to existing conditions. This fact justifies, if it does not demand, a selection of material of study, to a considerable extent, from national treasures of knowledge, from national history and literature."

The material must be arranged, in the lower grades of the schools, in psychological order; that is, it must be adapted to the degree of development of the child, to the assimilative power of his mind, to the experiences through which the pupil is passing outside the school, in the home, and in the neighborhood.

Thus arises that harmonious state of thought and feeling which, like the right mood, is especially favorable to the assimilation of knowledge. Such an arrangement of studies should be made that, at each period of progress, the largest possible amount of related matter may be treated at one time. Always offer to the child that knowledge for whose thorough comprehension and assimilation the most favorable conditions exist or can be readily created.

The following summary, borrowed in the main from Lange, presents the most important points to be considered in selecting and arranging the several lines of study: —

1. Select such materials of knowledge as lie close to child experience in general, and especially material which is close to the experience of the particular people and children with whom you are immediately concerned.

2. Take into consideration any peculiarities of intellectual or moral development in the people generally or in the children of the locality, in determining the content and form of the subject-matter to be selected.

3. Arrange the matter of instruction in all lines in such a way that each topic shall prepare the way for the

next one, and shall create in the child a strong desire for what is to follow, and shall afford numerous aids to easy assimilation.

4. Arrange the several parallel lines of subjects in the curriculum in such a manner that in each grade as many as possible of allied, or naturally related, topics may be presented at the same time, and thus become associated in the consciousness of the child.

By such an arrangement it is made easy for the child to unite the results of the instruction in the various subjects into a homogeneous and compact body of knowledge.

Tentative Efforts. — A few tentative efforts have been made to arrange courses of studies out of American material adapted to the successive grades of the public schools.

Most of these attempts, however, have been based upon the idea of concentration about a single central subject rather than upon the idea of two or three parallel and coördinate lines of studies.

As a natural consequence, it has been found very difficult, if not impossible to present a course sufficiently satisfactory to command general attention, or to secure favorable consideration from practical teachers. It will not prove a matter of serious difficulty to arrange courses along parallel lines.

Uniformity not Desirable. — But it will be found unwise to attempt to make such courses for the primary grades of the schools from just the same material in all parts of our country. For the courses in the first, second, and third grades, and to some extent even in the fourth, local material should be very largely selected. Such local material is abundant in all sections of the country, and is of a most interesting character.

The early history of Massachusetts affords rich material for profitable use in her schools; New York, Pennsylvania, and the Carolinas have abundant stores of subject-matter for interesting and instructing their children; Ohio, Michigan, and the other Central States have no lack of stories of adventure and settlement, of early pioneer life, of French "wood-rangers" and zealous, self-denying "apostles" to the Indians, stories which, it may be, sometimes combine a little of fable and myth with sober truth, but which their children should know. The farther West has its own peculiar supply of available material.

There is something wonderfully attractive to many minds in the idea of uniformity. They seem to overlook the fact that environments differ, and that early life must take its tone and color from its immediate surroundings: that it is the near in place and time which most interests the child. Let the idea of uniformity in the humanistic line of studies be put aside when provision is to be made for the lower grades of the elementary schools.

In the higher grades the material will be sought, not from local life and local environment, but from national life and from national history and literature. Here uniformity will come of itself and without conscious effort.

Since the various branches of mathematics are free from local peculiarities and coloring, essentially the same course will be adapted to all sections of the country. This course will naturally take a logical order, while methods of teaching will conform to the psychological order.

The course in science, in different places, will have

more of uniformity, in the lower grades, than the humanistic course, but not quite so much as the mathematical. In giving instruction regard should be had for local conditions, and, as a rule, the material used should be selected from the immediate environment.

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CHAPTER XIV.

THE STUDY OF CHILDREN.

Infant Psychology. — Education, as has been stated, is largely the result of action and reaction between the child and his environment, between mind and the outer world. A large part of the work of the parent and the teacher is to provide that this action and reaction shall take place under conditions as favorable to the child as possible. In order that such conditions may be provided, the teacher must understand the child as well as his environment; must become acquainted with the nature of the child, both physical and psychical, and must know the order, stages, and rate of progress of his development. It is true, in a general sense, that "the child is father of the man," that every activity of mature manhood exists in "germ and possibility" in the half-conscious infant. There is no "Infant Psychology," if by this expression we mean that the child has psychical powers and activities different in kind from the powers and activities of the man. If, however, the meaning is that the forms in which these activities manifest themselves, at the beginning of life and during several of the early years of childhood, are in appearance marvellously unlike the modes of manifestation in later periods, then, indeed, there is an "Infant Psychology" worthy of the most careful study.

Field of Study. — Within the last few years a good deal of attention has been given to the observation of children and to the study of their modes of psychical activity. The greater part of this attention has been bestowed upon children under three years of age, so that the results of the work done afford only indirect assistance to teachers in the primary schools. Quite recently children in school and of school age have been subjected to observation, to some extent, and the results of such observations have been published in various forms. The practical value to teachers of this study of childhood remains to be determined. It is reasonable to expect in due season some valuable returns for the labor expended; but it is still too early to look for formulated results which will modify methods of teaching or of school management, or will help materially toward the solution of the troublesome educational problems of the day. All intelligent teachers will desire to keep themselves informed of the general progress of child study and of the fragmentary results of such study as they appear.

Some Results Attained. — The actual results thus far attained in the study of early childhood may be summed up somewhat briefly. It is agreed that conscious mental life begins with sensations, and that sensations are states of mind produced by the action of external objects and influences upon the outer extremities of sensory nerves. After a little time, by the spontaneous action of the mind, sensations or their causes are located in space and time, and the result is perception, that is, a knowledge by the soul of things outside of itself. The nature of sensations and of the resulting percepts depends upon the character of the environ-

ment and upon the number and functions of the senses. If the number of the senses were increased, the field of knowledge would be correspondingly extended; if the number were diminished, the field of knowledge would be by so much contracted.

Action of the Senses at first. — At the beginning of life the action of all the senses is very feeble.

Taste. — The earliest sensations experienced are probably those of taste. The child within a very brief period after birth appears to distinguish tastes that are decidedly different from one another, such as sweet, sour, and bitter. The development of this sense proceeds with considerable rapidity, though there are great differences among children in this respect.

Smell. — The sense of smell manifests activity almost simultaneously with that of taste. The two are very closely related in the matter of selecting and enjoying food and in some other directions. Careful experiments show that children are susceptible to very strong odors during the first day of life. Agreeable odors are discriminated from disagreeable ones in the fifth and sixth weeks, and before the close of the first year some children exhibit evidence of enjoying in a marked degree the scent of flowers. The sense of smell develops less rapidly than some of the other senses, and is less acute in the child than in the adult.

Touch and Temperature. — The child must be susceptible to touch from the first moments of life, but the earliest impressions evidently produce very confused and uncertain sensations, giving no clear notions of anything external. Unlike the other senses, touch has its end-organs extended to all parts of the body and is frequently called the fundamental sense. Different parts

of the body exhibit very marked differences in degrees of sensitiveness to touch. The lips, the upper surface of the tongue, the lining membrane of the nostrils are exceedingly sensitive. The various parts of the eye, the skin of the face, the palm of the hand, and the sole of the foot are also peculiarly sensitive to touch. Touch, from the very first, ranks high as a knowledge-giving sense. In connection with sight and muscular movement it helps to notions of space, form, size, direction, distance, etc.

The sense of temperature is closely connected with touch, but should be distinguished from it. Like touch, it extends to all parts of the body, and like touch, may be regarded as passive and active; that is, the hand, for example, may be impressed by some object, or may feel the temperature of a hot or a cold substance without any effort or movement of its own; or it may be stretched out to touch or to test the temperature of an object. In the one case it is passive, it merely receives; in the other it is active, it puts forth effort. Touch and temperature are at first both passive in case of the young child.

Organic and Muscular Feelings. — Organic feelings are those general feelings of comfort and discomfort which arise from the condition and action of the internal organs of the body. Probably the new-born child is susceptible of pain and pleasure from this source, but observations have thus far given us no important knowledge touching the character of his sensations. Muscular movements are without doubt attended with pleasurable or painful feelings; but most of these movements during the first weeks of life are non-voluntary, and the attending feelings must be exceedingly vague and indefinite in character. A little later the healthy child finds great

pleasure in the vigorous exercise of his muscles. Probably as early as the beginning of the second year the pleasure resulting from appropriate exercise and instinctive curiosity unite in impelling the child to a good measure of physical activity in creeping, walking, and handling all objects within his reach.

Hearing. — During the first hours of life, the Eustachian tube not being yet fully open, the child is completely deaf. "And even when several days have passed, the hearing must be called bad. A difficulty of hearing continues to exist normally for a long time, and this peculiarity is of great benefit to the child; for, if he were able to hear as well as an adult, he would be altogether too much disturbed just in that first period of life when he needs rest most of the time." During this time the child is affected by loud noises and jars which probably agitate the nerves generally more than the auditory nerve.

Observers are not agreed as to the time when distinct hearing begins. The localizing of sounds, that is, the determination of the direction and distance from which a sound comes, proceeds very slowly. The first indications of effort to localize is shown by turning the head. This turning is first noticed between the tenth and the seventeenth week, the conclusions of different observers being considerably at variance. The power to distinguish the quality of sounds so as to know one voice from another, or the different tones of the same voice, is developed slowly; the time when this can be done beyond question varies, according to different writers, from the sixteenth day to three months, or even later. It is altogether likely that much depends upon the efforts made by those in charge of the child. It can hardly be

doubted that different tones do produce different effects upon the general nervous system of the child quite early, even though the ear fails to recognize clearly their differences. It is a matter of common observation that harsh and discordant tones excite and irritate a very young child; while gentle and harmonious tones soothe and quiet the same child. This probably results from the susceptibility of children to the influence of musical sounds and rhythm. As a general rule children from a very early period, in some extreme cases as early as the second or third week of life, and frequently as early as the middle of the first year, exhibit interest in music, this interest being, in many cases, accompanied by movements of the arms and legs. "There are two chief sources of pleasure in music: the time, and the tune. With regard to the first, it seems safe to say that no healthy, normal child, after the first few weeks, fails to appreciate rhythmical movements." The susceptibility to melody is shown quite clearly as early as the fifth or sixth month. A child, five and a half months old, would cry when a plaintive air was played, and would exhibit pleasure by tossing its arms and jumping when a lively melody was played. Most observers conclude that all normal children have capacity to appreciate music, and that this capacity may be easily cultivated by proper treatment. It is said by some that children accustomed to hear day by day harsh, discordant, grating noises come to like these as well as the most agreeable melodies. There is, however, good reason for questioning the correctness of this conclusion, although the musical susceptibility may undoubtedly be greatly modified by the sort of culture which it receives.

Sight. — The mechanism of the eye is complete at

birth, and light can be distinguished from darkness on the first day of life, but seeing, in the proper sense of the term, does not take place at once. The power to adjust the movements of the eye to external conditions is acquired only gradually, and perfect co-ordination in the movements of the two eyes is not secured until several days, perhaps weeks, have passed. One eye may move while the other remains at rest; one may turn in one direction and the other in a different direction; one may open while the other remains shut, and still other variations in movements may occur for considerable time. Preyer says, "The field of vision at the beginning of life resembles a chart placed close to the eyes, upon which the colored, the bright, and the dark parts of the surface blend with one another so that nothing is distinctly apprehended. It is idle, therefore, to dispute whether the new-born infant sees an object single or double with his two eyes; or whether he sees it upright, or upside down; or whether he confounds right and left in the field of vision. In reality he sees no object at all yet, and is very slow in learning to distinguish between above and below, left and right, near and far, by means of the motions of things, by the movements of his own eyes, and by his attempts to seize objects."

The progress of the child in seeing is divided into four stages by Preyer, and some others adopt his divisions. There is, first, simply "staring" into space; probably sensation is experienced, but no object is clearly perceived. The "looking" of the child during the first few days is undoubtedly of this sort. The head is turned, the eyes are opened widely, but there is no intelligent, voluntary action. The acts are instinctive or reflex. The second stage is that of real "looking;" the

eyes are consciously and purposely fixed upon an object, and there is something of expression in the countenance. This stage is reached during the fifth week by children of average intelligence.

In the third stage the child acquires the power of "following" with his eyes a moving object, the head remaining motionless. The movement at first must be slow, and the object specially attractive by its bright color. This "following" begins, in most cases observed, about the fifth week or a little later.

In the fourth stage the child passes from looking and following to active and voluntary "search" for objects. This power is acquired about the fourth or fifth month. The earliest exhibitions of "searching" are seen in the efforts of a child to discover a person whose voice he hears, or to find an object which has suddenly disappeared.

Judging of Distance. — At first the child sees only what is near him; and for a long time after he sees objects at different distances he is utterly unable to judge of these distances. A boy nearly a year old reaches eagerly for the moon, and another at two, standing on the ground, tries to hand something to a person looking out of a second-story window. Distance is learned originally by muscular movements in reaching, creeping, and walking.

Discriminating Colors. — For several days the new-born child does not distinguish colors; he only distinguishes light from darkness. After discrimination commences it evidently progresses very slowly, though it is exceedingly difficult to determine the exact rate of progress from the fact that the child's acquisitions in language are still too limited to enable him to give names to his color

concepts, or to describe the discriminations which possibly he makes in his own mind. Since there is no natural relation between a color and its name, the child must find serious difficulty in associating them; doubtless many of the apparent failures of children to recognize and name colors correctly come from lack of such association. In many cases the vocabularies of children of two or three years of age contain no names of colors, or very few such names, although they may use four or five hundred words. A few children show a preference for some particular color within the first months, and even within the first four or five weeks. Various experiments in testing the power of color discrimination have been made, all of which are attended with more or less of difficulty, and with considerable doubt as to the correctness of the results, or the reliability of the conclusions drawn from these. The results obtained thus far by different observers do not agree, and it will be the part of wisdom to wait for other and more conclusive experiments and observations. Without doubt any bright colors, such as red and yellow, are first discriminated; beyond this no positive affirmations can, up to this time, be made with safety. Color discrimination, like discrimination in any other direction, involves the power to compare and judge, and these acts depend upon the development and exercise of the judgment. A child may have a feeling of difference much earlier than he can intelligently compare the objects which differ, and state his conclusion.

Early Manifestations of Feeling. — Manifestations of feeling appear very early in the child's life in the form of facial expression, of various muscular movements, and of cries and other vocal utterances. The first feelings

experienced are altogether physical in their character, resulting from impressions of some sort upon the sensory nerves, such feelings as comfort and discomfort, pain and pleasure, hunger and thirst, and many others. The earliest feelings which partake of a psychical character are instinctive, and have instinctive modes of manifestation. These modes of manifestation, however, continue after the purely instinctive stage has passed, and the feelings expressed by them become to some extent consciously intellectual or rational.

Fear. — The feeling of fear is manifested at a very early period, perhaps as early as the eighth or tenth week in some cases, and quite frequently in the last half of the first year. These first manifestations must be purely instinctive or hereditary, since they take place before any harm has been experienced, and before definite ideas could be formed of harmful objects. They are similar in character to the manifestations of fear in the lower animals. The young child starts and cries at strange sights and sounds, shrinks from cats and dogs, and from some persons, though he has never received injury from any of these. It is generally believed that quite young children exhibit more instinctive fear of sounds than of sights. Many childish manifestations of fear, as fear of the dark, of being alone, are undoubtedly due to the stories told by nurses and by other children, and to unwise methods employed by parents and teachers.

The second stage of the child's development in this direction is reached when fear arises from the recollection of past experiences, which are brought to mind by the presence, or by a vivid idea or representation, of an object or person from whom injury has been received,

or who is in some way associated with discomfort and pain. Such fear, having its origin in intellectual processes, in memory and thought, is properly called rational.

Wonder, Surprise, Astonishment. — These emotions manifest themselves at a very early period, and are closely related but not identical; the unexpected causes surprise; the new, the cause of which is not comprehended, produces wonder; the two feelings are usually mingled in the young child's mind, and appear during the first month. Astonishment is not observed until a little later, and is a more intense feeling than wonder. Under its influence, when very strong, the child becomes motionless, the eyes are opened wide, and the lower jaw drops. These are evidently instinctive modes of expression, as they appear before any opportunity of observation can render imitation possible. It is probable that a natural and intimate relationship exists between the simple emotion of wonder and the deeper feelings of awe and reverence which, at a later period, the child manifests for the superior strength and wisdom of parents and others, and which lead ultimately to acts of adoration and worship. The acceptance of the supposition of such relationship carries with it necessarily an admission of the doctrine of the existence in the soul of germs from which some sort of religious faith is naturally evolved.

Curiosity is, in its earliest manifestations, a purely instinctive impulse, closely associated with surprise and wonder at the beginning of life, but after a short time exerting its power quite apart from the influence of these emotions. Gradually it becomes less and less mere feeling, and more and more intellectual in its character, changing finally into love of knowledge. Curiosity is

the most effective force in the development of childhood, showing its power as early as the sixth or eighth week, and becoming exceedingly active in the last part of the first year.

Anger manifests itself very early, but how early it is difficult to determine, from the fact that its first manifestations cannot easily be distinguished from those of discomfort and pain. Some observers discover unmistakable signs of anger in the fourth week or ever earlier, a little later the evidences are abundant. The practical problem presented to the parent and the teacher is, since anger cannot be completely eradicated, how can the child be trained to properly control this feeling, which, uncontrolled, may become a fierce and most dangerous passion. Anger is closely allied to resentment and just indignation, and can only with extreme difficulty be completely separated and distinguished from these feelings. Perez says, "It is necessary to surround the cradle with an atmosphere of sweet serenity, but it is not always necessary to hide anger. Just anger should be shown, but with moderation."

Feelings of Beauty, Love, Sympathy, etc. — The enjoyment of rhythm and melody, to which allusion has been made, may possibly be regarded as an indication of appreciation of the beautiful in movement and tones. To the young child undoubtedly the agreeable is the beautiful so far as the æsthetic feeling finds manifestation at that period. The child begins to show pleasure in personal adornment during the last months of the first year, and exhibits delight in pretty flowers, and in other objects clothed in bright colors. Yet in the selection of toys beauty seems to have very little influence upon his choice.

The love of fun and the enjoyment of the humorous manifest themselves in the third or fourth month. "About this age childhood may be greatly amused by such little games as throwing a pinafore over the head and suddenly withdrawing it, and by the familiar games of hide-and-seek. Later they show great pleasure at being carried on one's shoulder, swung about in the air, or tossed up to the ceiling. They laugh most heartily while the fun lasts, and are very unwilling that it should stop."

The early exhibitions of feeling in children are mostly egoistic, but some exhibitions of affection for the mother and other persons in charge of them appear even in the second month, and quite clearly in the fourth. A few months later great fondness is shown for dolls and other playthings, but in the absence of the objects, the affection does not seem to persist for any considerable time. The feeling of sympathy does not appear with distinctness earlier than the sixth or seventh month, but in the second year exhibits a good degree of strength. The desire of the child to receive sympathy is evident from the fact that, when hurt, he seldom cries unless some one is near enough to hear him, and in case of slight injuries he cries much more vigorously if sympathy is manifested toward him.

Envy and Jealousy manifest themselves before the close of the third month in some cases, and quite strongly at a little later time. The distinction between "meum and tuum" is not recognized by the young child; everything is his; others have no rights which he "is bound to respect." He claims all the playthings, all the attention, all the caresses, and is distressed if he cannot have them. The treatment of children when the manifesta-

tions of these feelings commence needs to be especially wise and judicious.

Intellectual Development. — The development of the knowing activities must of necessity go on simultaneously with that of the emotions. Sensation is immediately followed by *perception*, and this is attended by the formation of ideas and the action of the *judgment* and *memory*. The conscious recognition by the child of the difference between one sensation and another, between sweet and sour, between one odor, one sound, or one color and another, indicates intellectual activity. Ideas of space, of time, of distance, and of many other things are soon formed. It is impossible, within a limited space, to trace in detail the progressive steps of the child's intellectual development. The reception through the senses of impressions deep enough to result in the formation of distinct ideas, which can be retained and recalled after the lapse of several days or weeks, is so entirely dependent upon *attention* that the progressive development of the power of mental concentration is indicated by the growth of memory. A child of four months recognized the nurse after an absence of four weeks. Impressions made before the child is able to talk are pretty readily recalled by similar impressions received at a later period. Observations seem to prove that the mental images of things *done* by the child are more vivid and more permanent and consequently more surely recalled than images of things simply *seen* or *heard*. This indicates the importance of allowing children as much opportunity as possible of "doing" in connection with their early school work, as well as in connection with the home.

The child forms *associations* very early by the laws of

resemblance, contrasts, and contiguity. Perez affirms that, "there is not one of the combinations of association, which have been so carefully studied by psychologists, of which we cannot find at least faint foreshadowing in the child of six or seven months." Examples of such association will readily occur to every one who has had even limited opportunities of observing young children. Probably the first associations are made by *contiguity*, as when the hat and cloak are associated with being carried out of doors, or certain articles are associated with taking food, or a name is associated with a person, or some sound or motion with that which produces it.

Passive Imagination, so-called, which is merely simple conception, usually involving memory, manifests its activity as soon as associations have been formed between things themselves, or ideas themselves, or between words or other signs and the objects and acts which these represent.

Constructive Imagination, or imagination proper, exhibits its peculiar power at a very early stage of the child's mental development. The cheap toys of the child become live soldiers manœuvring and fighting battles, or locomotives and trains of cars, or steamships, or rows of houses, and a great multitude of other things. Children are very fond of imagining themselves to be other persons, kings, queens, fathers, mothers, teachers, pupils, shopkeepers, and so on indefinitely. This tendency of childhood explains many of the so-called "children's lies," which are, in fact, not lies at all, but mere creations of the imagination, related with no intention of deception, and without involving moral turpitude. The cultivation of the constructive or creative imagination is, however, attended with the possibility of danger

to the moral nature of the child, unless care is taken to keep the distinction between the real and the imaginary clear in the child's mind, especially when his ideas are to be clothed in language and described to others.

The thinking activities of *judgment* and *reasoning* appear in rudimentary forms, in connection with the mental processes previously treated of; *conception* proper, the power which gives birth to abstract and general notions, cannot manifest its power with any good degree of clearness until considerable progress has been made in psychical development. At first everything is concrete and individual with the child; the power to abstract and generalize is acquired very slowly, and first generalizations are exceedingly crude and defective. Some writers affirm that general concepts can be formed only after some progress has been made in the acquisition of language; on the other hand, Perez believes that "the ability to abstract may show itself, though imperfectly, even in the first year." After the close of the second year the thinking processes, including reasoning, grow in vigor very rapidly, and manifest their activity in all directions, and in connection with everything which occupies the child's attention.

Development of the Will. — The development and training of the will, in one aspect, is discussed in connection with the subject of moral instruction and training. The purpose here is to consider briefly its early manifestations without reference to the question of conduct in its relation to morals and responsibility. The existence and action of any force can be known only by results; force produces movement or tendency to movement of some sort. Obstacles may be in the way, effective resistance may be made, and movement may

be prevented; the tendency, however, remains. The external signs of the existence and action of will are muscular movements, but all such movements do not result from the action of will. It is necessary, therefore, to know what signs indicate that muscular movements are willed, and to learn when these signs may be first recognized in the movements of the child. The muscular movements observed in children are conveniently divided into several classes, although these classes are not entirely distinct, since some movements belong in more than one class.

(1) *Automatic* movements, such as the beating of the heart, respiration, and other movements of the vital organs; these movements are all regular and have a definite purpose.

(2) *Impulsive* and *Random* movements, such as the jerking movements of the hands, feet, and limbs; these movements are devoid of purpose, although they serve an important end in giving needed exercise to the muscles, and in preparing them to act under the direction of the will at a little later stage of development.

(3) *Reflex* movements, such as winking when something approaches the eye, coughing when the throat is irritated, jerking the foot away when the sole is tickled. These movements may be willed at a later period.

(4) *Instinctive* movements, such as sucking, swallowing, biting, grasping with the hand, creeping, and walking. Some of these movements are automatic, and some are also reflex; they differ from impulsive acts in having a definite purpose, though this purpose may not be understood by the child. At a later time these acts may all become willed.

It should not be supposed that these movements ap-

pear in the order here given, or that they follow each other in any order; they are mingled together from the very first, and some of them persist through life.

(5) *Imitative* movements. The appearance of imitation indicates representation, the formation of definite ideas, especially of motor ideas, the existence of purpose, and consequently of will. Before an act can be intentionally performed, it must be mentally imaged or represented; the act may have been previously performed by accident, or by a random, reflex, or instinctive impulse, and may, in consequence, be more readily executed in obedience to volition. It is obvious, then, that the first external manifestations of volition are discovered in efforts at imitation; will may have been exercised by the child at an earlier period in efforts of various kinds which escape observation.

Some writers think efforts at imitation can be discovered in the third or fourth month, and observers pretty generally agree that imitative acts appear clearly in the last half of the first year. Among these are movements of the lips, of the head and hands, attempts to utter sounds in laughing, crying, coughing, and sometimes in the reproduction of simple melodies. Every parent and teacher can testify to the early appearance of these and many other imitative acts. Although Perez entertains a different opinion, yet the conclusion seems to be well sustained that desire precedes or is the "primary stage in every volition." It is not necessary to determine whether desire is an inborn appetite, an instinctive impulse, or is a result of experience, although the theory that it is inborn or instinctive is probably true.

Self-Consciousness, or the Idea of Self. — The idea of self, in the proper sense of that term, must be attained

very slowly. It is hardly conceivable that even a child can be conscious of a sensation without being, at the same time, conscious of himself as the person or being who has the sensation. It is not necessary to suppose that the idea of self at the time is at all distinct, or that there is any adequate notion of what is involved in the idea; but nevertheless the germ of the idea, if the expression is allowable, must be present, and out of this very gradually the complete notion is evolved. The chief difficulty is found in determining what and how much the child's first and indistinct notion of self embraces, and how this inadequate and imperfect idea is filled up by one element after another until it becomes a conscious notion of the real self.

The child's treatment of his body shows that for considerable time he does not regard it as any part of himself. Sometimes, even in the second year, a child bites his own fingers and cries at the pain without appearing to perceive the relation between the fingers and himself. It is doubtful if, during the first year and well on into the second, the average child recognizes any portion of his physical organism as part of himself. It seems probable that the muscular sense has much to do with developing the idea of self, and of suggesting the connection of the parts of the body with each other and with the *I* or *me* of the child. The sense of sight, also, must play an important part in this matter. Preyer says: —

"In the child who is born with all his senses, each sense contributes more or less toward the distinction of his own bodily members from other persons and from objects without life. The eye sees the arms, the hands, and the fingers, which cannot as yet be counted, the legs, knees, feet, and the still

less countable toes — all of which move. Each separate part, of course, can only very slowly be impressed upon the memory through the sense of sight, along with the gradual development of the visual sphere; for as late as the thirteenth, the fourteenth, even the nineteenth month, and, in fact, toward the end of the second year, I have myself repeatedly perceived, in children perfectly sound and well developed, their own arm appears to them something entirely foreign. It is not easy to determine what part the senses of hearing, smell, and taste play in the development of the idea of self, but it can hardly be doubted that their activity combines with that of sight and touch in the final and full evolution of the notion."

The behavior of the child on seeing his image in a mirror, and his gradual discovery of the relation of this image to himself, are matters of much interest; but they evidently have little or nothing to do with the development of self-consciousness. They afford excellent opportunity for studying the early manifestations of the feelings of surprise and wonder, and the growing development of the impulse of curiosity.

Acquisition of Language. — The relation of the child's thinking to the acquisition and use of language is an exceedingly interesting subject of speculation, but unfortunately one which cannot at present be determined with any good degree of satisfaction. Theorists are widely at variance in their conclusions, and dogmatic assertions fail to carry conviction or to command the assent of judgment. It will be the part of wisdom to be content with well established facts without insisting upon the validity of inferences hastily drawn from these. The speechless child can give no reliable information, and memory, in its backward reach, stops short of the period when the power of speech was first acquired and

employed. It is often said that the child's first act is to cry, but this first cry has no significance, being merely the result of an automatic and impulsive exercise of the vocal muscles. Soon, however, the cry becomes modified, differentiated, so to speak, to indicate different mental conditions. The modifications are at first probably purely automatic or instinctive, produced by the unconscious influence of feelings upon the muscular organism. Such variations have been observed as early as the fifteenth day, and they become quite distinctly marked within the first three months. There are cries of hunger, of fear, of pain, of pleasure, and many others. These cries are language only in the sense in which the cries of animals are language. They are instinctive, automatic utterances, before evidences of thought, purpose, or imitation can be discovered.

The next step toward the acquisition of language consists in further modifications of these vocal utterances, resulting partly from mere impulsive movements of the vocal muscles, partly from the apparently purposed repetition of sounds produced automatically or accidentally, and partly from incipient efforts at imitation. Such utterances are not yet indicative of thought, and do not constitute language, although occasionally they take the form of sounds of some letters of the alphabet, and, in a few cases, of a combination of such sounds into short syllables. As would be anticipated, sounds of vowels precede those of consonants; and of the vowels, *a* generally appears first with some of its various modifications. Before the sixth month, vowel sounds are united with one another and with consonants to produce syllables, as just stated, without meaning. The first consonants uttered are usually *b*, *p*, *m*, and these are united with *a*,

producing such syllabic combinations as *ma*, *mama*, *pa*, *papa*, and so on. These combinations of sounds, though expressive to the parent, are probably at first entirely meaningless to the child.

At about this time, that is, in the last half of the first year, the imitative impulse begins to be very strong, and progress in the production of sounds and in combining them, becomes comparatively rapid. During this period sounds, as vocal signs of things and ideas, are associated with objects and acts, and the child commences to possess and to employ language in the strict acceptance of the term. It is stated by some observers that while the child is learning to walk little or no progress is made in the acquisition of language. If this statement is correct it illustrates the general truth that close attention can be given to only one thing at the same time.

After the art of walking has been mastered, rapid progress is usually made in the matter of speech; the imitative propensity finds full scope, and the tendency to form associations between things and words exhibits itself in a very marked degree. Many crude generalizations are made through the almost instinctive impulse to overlook all differences when some one striking resemblance is noticed, and to seize upon apparent analogies which soon disappear as knowledge increases. All round objects are balls; the moon and all shining objects are lamps; every animal which bears even a remote resemblance to a dog is a *bow-wow;* the name *papa* is applied to all men, and *mama* to all women, for some time.

Vocabulary at Close of Second Year. — Preyer says:

"I have received from various mothers, who have observed carefully, lists which show that the vocabularies of nine children — eight girls and one boy — comprise in the case of the small-

est number of words, 173, and of the largest, 1,121 words. But these extremes owe their great variation probably far more to the difference in the way of observing than to the actual difference in the children; for in the one case the observer was very strict in excluding all doubtful expressions, while in the other case the words of a dictionary were marked, and the child was asked a question in answer to which he might employ the word under consideration. In this latter case suggestion has probably exerted a strong influence to increase the number of words. The remaining seven children had each a vocabulary of four or five hundred words."

This extract justifies the conclusion that observations, conducted in a random way and by persons of limited experience in the work and without instruction or uniformity in methods, have very little value; and that inferences and generalizations, drawn from the reported results of such observations, should be received with extreme caution, and should be held subject to frequent and radical revision.

Interesting tables, prepared by Mr. Tracy of Clark University, giving the vocabularies of twenty or more children, and embracing five thousand four hundred words, show that of the words used,

60 per cent are nouns,
20 per cent are verbs,
9 per cent are adjectives,
5 per cent are adverbs,
2 per cent are pronouns,
1.7 per cent are interjections,
0.3 per cent are conjunctions.

Inferences from these tables must be received with the limitations and caution just suggested.

FOR READING AND REFERENCE.

Preyer's The Senses and the Will.
Preyer's Development of the Intellect.
Preyer's The Infant Mind.
Perez's The First Three Years of Childhood.
Tracy's Psychology of Childhood.
Pedagogical Seminary, vols. i. and ii.

CHAPTER XV.

THE STUDY OF CHILDREN (*continued*).

Recent Study of Children. — The study of early childhood, to some of the results of which the previous chapter was devoted, has been carried on mainly by a few special and eminent students of physiological psychology. Recently the study of children has assumed a less scientific aspect, but has interested a larger number of observers. The chief value of the work up to this time has probably accrued to the observers themselves, in sharpening their powers of observation, in giving them a better insight into the real nature of the developing mind, in leading to the discovery of more open and more direct and easier avenues of approach to the soul of the child, and in creating a truer and more intelligent sympathy with the dispositions, tastes, and occupations of children. Where the observers have been teachers, the tendency has been to draw them and their pupils closer together, to increase their confidence in each other, to make teaching less laborious and formal, and study on the part of the children less distasteful and irksome. In presenting some of the most important of these observations and experiments, it will be difficult to follow any logical order.

Contents of Children's Minds. — Examinations and observations to ascertain the contents of children's minds,

at the time of entering school or soon after, were made somewhat systematically as early as 1869 in Berlin; in Boston in 1880, under the direction of Dr. G. S. Hall; and since that time, work in the same field has been carried on in some other places in this country. In Boston, special teachers, experienced in kindergarten methods, were detailed to conduct the examinations, each teacher taking three children at a time into a room alone, where they would not be interrupted by the presence of other persons, and questioning them upon topics predetermined, so that subjects and methods might be as uniform as possible. The published tables, showing the results of the examinations in Boston and also in other localities, merely establish more satisfactorily the truth, previously generally accepted, that the first percepts and concepts of children are determined mainly by their surroundings. It might naturally be anticipated that a very large per cent of children in a great city would be unacquainted with growing wheat, or growing berries, or with particular varieties of trees, or with other objects found almost exclusively in the country. Evidently the purpose of such examinations, if they are to be of practical value to teachers or parents, should be to ascertain what sort of concepts children form of objects immediately about them, objects within the range of their own observation and experience, and with which they should be well acquainted before entering school.

It is agreed by all careful observers that the correctness and distinctness of the child's concepts of objects in his early environment, will depend upon the degree of attention which he has been led to give these particular objects, upon the readiness with which names and

descriptive words can be associated with the objects, and upon the pleasure found in repeating the names and descriptions, since such repetition brings the concept frequently into consciousness.

The examinations reported indicate that girls excel in knowledge of common things just about them, of matters connected with home-life generally, of parts of the human body, and that their favorite stories are more imaginative than those of boys. Boys excel in knowledge of animals, of numbers, of remote things, and exhibit more power to sing and to articulate correctly from dictation. On the whole, there is no essential difference in the knowledge acquired by boys and girls before entering school.

Conclusions under this Head. — (1) Since present attainments prepare the way for new ones, and the new and unknown must be mastered by means of the old and known, the first work of the teacher is to ascertain how much and what the child already knows. And since the "contents of children's minds" at school age depend mainly upon the environment, the teacher should make herself acquainted, at the very outset of her work, as thoroughly as possible with the local conditions and influences surrounding the school as a whole, and with the peculiar conditions and influences surrounding individual pupils. (2) The best educational work of parents is in the direction of training the perceptive powers of their children, in leading them to become acquainted with the most excellent things and the most wholesome influences in their immediate environment, and in aiding them to form correct and clear concepts of what they see, hear, and handle. (3) It is conceded that the child in the country has an advantage over the city child in

the character of the sights and sounds and of the objects generally which surround him. Dr. Hall says, —

"As our methods of teaching grow natural, we realize that city life is unnatural, and that those who grow up without knowing the country are defrauded of that without which childhood can never be complete and normal. On the whole, the material of the city is no doubt inferior in pedagogic value to country experience. A few days in the country at this age has raised the level of many a city child's intelligence more than a term or two of school training could do without it. It is there, too, that the foundations of a love of natural science are best laid. We cannot accept without many careful qualifications the evolutionary dictum that the child's mental development should repeat that of the race. Unlike primitive man, the child has a feeble body and is ever influenced by a higher culture about him."

(4) Much experience with children and much tact and skill are required to enable one to learn by questioning, or by other means, the exact notions which children have formed. They often reply at random, or invent answers to avoid the appearance of ignorance, or adopt suggestions and inferences from questions, or repeat without comprehension what they have heard from others. The singular and amusingly absurd ideas frequently associated by children with bits of rhyme, familiar expressions, and even with moral and religious maxims, reveal the unreliable nature of hasty conclusions concerning their concepts.

Particular Mental Activities. — The study of the contents of children's minds, as an unsorted mass, is naturally supplemented by the study of particular modes of mental action. The *Perceptive powers*, being earliest in

their development, and being peculiarly active in childhood, have received some special attention. Observations and experiments have been made upon the different senses to determine in what direction they are particularly active in any individual child, and also their comparative activity in a number of different children.

Sight. — Experiments have been made to ascertain the readiness and accuracy of children in distinguishing and judging of *colors* by requiring them to select, without much delay, from a collection of variously colored cards or other objects, a match for any color placed before them. Their power to judge by sight of *form* is determined by requiring the selection of corresponding forms, and also by efforts at drawing and modelling. The *number* of small objects which can be distinguished at a glance is ascertained by tests with dots, sticks, pebbles, leaves, and other things. The ability to judge of the extent of *space*, in the several dimensions, is tested by means of sticks or lines of different lengths, by squares and other figures, drawn on a plane surface, and by small solids of varying sizes.

The other Senses. — The other senses are tested by appropriate means, — hearing by experiments on the pitch of sounds, upon singing the scale, upon the influence of rhythmic utterances over movements of the hands and feet and other parts of the body. Tests of the senses of taste, smell, and touch will readily suggest themselves without particular description.

The Reproductive and Representative Activities have been subjected to observations of an interesting character in various quarters and by various means. The results show, as might have been predicted, the intimate

relation between percepts and images or concepts, between the action of the senses and the action of memory and imagination. The child can remember and reproduce, in the early stage of his development, only what he has received through sensation; and he can exercise creative or productive imagination only upon materials furnished by the same activities.

Memory, or Reproductive Imagination. — As just stated, the memory can return only what it has received; it is the servant of the other psychical powers. Consequently tests of memory in the child are rather tests of the comparative activity and productiveness of the different senses. The cultivation of a particular sense determines that memory and imagination shall be cultivated in the direction of the material which that sense supplies. One may, therefore, if he prefers, speak of different memories and different imaginations, as the visual, auditory, and motor memory or imagination, indicating by this form of speech merely the specific direction in which the activity is of necessity exercised. Which of the senses shall be most active in childhood, and shall in consequence furnish the greatest number of psychical images or notions for reproduction and combination, may be determined by native disposition and taste, by the apparent accident of surrounding conditions, or by the set purpose of parents and teachers.

Touch. — Observations appear to prove that images derived through touch are seldom reproduced with much vividness or distinctness by the ordinary child. The reason for this is obvious: he depends very little upon this sense for his acquisitions. On the other hand, the blind, and especially the blind and deaf mute, reproduces tactile impressions with great facility, since

he is forced to rely upon this sense for almost all his knowledge. The cases of Laura Bridgman and Helen Keller afford most interesting illustrations of this fact.

Visual Images. — Undoubtedly visual images, images proper, are recalled more readily and more abundantly than any others by the majority of children and by adults also. Sight is sometimes called the regal sense. Thoreau says, "Of five castes it is the Brahmin." The visualizing power differs very greatly in different children; the ordinary pupil learns lists of words and columns of figures more readily by seeing them than by hearing them repeated. He will learn still more readily if he adds movement to sight by writing the words and figures. A part of the increased facility probably results from the more prolonged and intense attention required for writing; but something without doubt is gained by the combination of the motor image with the visual one. Some children, in recalling figures, words, sentences, locations of places, geometrical and other forms, make a mental picture of the page of a book, of the map, chart, or blackboard, which they have used in learning. Galton says, —

"Some few persons see mentally in print every word that is uttered; they attend to the visual equivalent and not to the sound of the words, and they read off, usually as from a long imaginary strip of paper, such as is unwound from telegraphic instruments. In an extreme case, frequently referred to, the individual 'at school recited from a mentally seen page, which he read off line by line and letter by letter. In making computations, he ran his mental eye down imaginary columns of figures, and performed in this way the most varied operations of arithmetic. He could never think of a passage in a play without the entire scene, stage, actors, and audience appearing before him.'"

Auditory Images. — A few persons, probably not a large number, have what may be called an auditory memory; that is, they recall sounds rather than sights; they reproduce spoken rather than written words; they hear rather than see in memory and imagination. How common this peculiar form of memory is among children it is impossible to determine with our present information. Undoubtedly many children remember what they read or study aloud better than what they read or study silently. This, however, may be, in part at least, the result of habit rather than a mental peculiarity.

Motor Images. — Allusion has been made to the probable aid to memory derived from uniting motor images with those derived from sight. Without doubt some children depend considerably upon motor concepts, either alone or combined with other images, in their efforts at reproduction. In the movement of the lips when studying, and when trying to recall words, probably assistance is rendered by the mere motion of the vocal organs, though the sound is mostly suppressed.

Productive Imagination, or Imagination proper. — The direction in which productive or creative imagination must be exercised has been indicated with sufficient clearness under the previous head. Since the imagination does not create material, it must use such material as the memory and conception supply. Consequently we shall have modifications and combinations of images furnished by all the senses. One child will best combine sights; another, sounds; and still another, movements; a few appear deficient in imaginative power in all directions, being satisfied apparently with the prosaic realities about them. Many of the products of the childish imagination are combined with obvious efforts

at generalization and classification; the influence of analogy is readily discovered; the dew is composed of the tears of the grass and flowers; the stars are God's candles or lamps; the stars, again, are children of the moon.

The *plays* of children, especially, give scope to the imaginative activity, and owe much of their interest and charm to the freedom with which it acts; it will, however, be noticed that in their wildest creations they are limited by the material with which they have been supplied. They play meeting, school, tea-parties, afternoon calls, and other things which they have learned from their elders. They imagine themselves soldiers, Indians, hunters, doctors, teachers, preachers; they make believe they are wild beasts and other animals of various kinds. The imaginative plays of girls generally differ, to a considerable extent, from those of boys. These differences arise partly from native impulses and partly from the influence of early surroundings and instruction.

Thinking and Reasoning. — The published results of recent observations of the thinking and reasoning processes of young children have revealed very little if anything new. Nevertheless, they are of interest and value to all teachers, and especially to those who are themselves preparing to make observations in the same direction.

Professor Brown, in presenting for publication some records of observations made by students of the Normal School at Worcester, Mass., arranges them under the following heads: (1) Misunderstanding of words; (2) Applications of sayings; (3) Explanations of things; (4) False reasonings; and (5) Thoughts and reason-

ings about God, Christ, Heaven. These heads suggest convenient bases of classification, although the classification, in any particular case, will usually be determined by the end immediately in view.

Principal Russell, of the same school, makes some excellent suggestions in relation to the subject under consideration. He says: —

"Our first experiments lacked simplicity and directness, and were encumbered with unnecessary divisions, explanations, and cautions. It is a characteristic feature of our practice that we do not limit the field of observation by proposing definite points to be investigated, or even making out special lines of inquiry. We made the mistake of beginning in a somewhat more ambitious way, that is, with more definite and restricted aims and with the hope of reaching certain conclusions; but the results recorded at that time are meagre and unsatisfactory, and the method was soon enlarged in scope, so as to give our observers greater freedom, and occupy them with what they could do, instead of what they could not. For instance, children were much questioned at first upon a great variety of topics, and their answers carefully recorded. But it was soon found that these answers possessed little value, because the children, by the very act of being questioned by adults, were thrown out of their natural mental equilibrium, and they reacted upon the questions with replies that were more or less mechanical, fictitious, self-conscious, or otherwise distorted. It was like studying the nature of a wild animal by observing its behavior in captivity. We came to abandon in large measure formal questioning, and along with it most of the seeking, prying, and testing that had been first attempted. We fell back upon the device known to sportsmen as the "still hunt." The observer learned to efface himself and to conceal his purpose, to keep the note-book and pencil out of sight and feign preoccupation, watching the child, as it were, out of the side of the eye."

The method of observing here indicated is undoubtedly, in the main, the correct one. A definite and restricted purpose or aim may sometimes, however, be profitably kept in view; and, under some conditions, questioning may be employed, provided the questioner has sufficient knowledge of child-nature and a large measure of genuine tact and skill.

Ethical Notions. — The general moral development of children has been discussed in another chapter. It is the purpose here only to notice briefly some of the conclusions reached through observations and experiments to ascertain the ethical notions of children.

A few series of observations and questionings have been made to ascertain the religious and theological ideas of children. The general results of such examinations could be easily anticipated by one acquainted with the environment of the children, with the homes in which they were nurtured, with their early associations and the instructions which they have received. The only matter of surprise will probably be the extreme crudeness of their notions and the intense realism of their conceptions. These so-called religious ideas, whatever they may be, have very little connection with ethical ideas or with questions of conduct. In this respect the young child and the primitive man give evidence of close relationship. In both the feeling of wonder passes into that of awe, in some cases accompanied by fear, then into reverence which impels to worship. Fear both restrains and constrains, and is useful till a susceptibility to higher motives is developed. But such restraint and constraint relate only to behavior towards the object of fear and reverence, and have little or no influence upon conduct in human relations. It is

well stated, however, by Professor Barnes that the attitude of children of different ages towards religious ideas and religious instruction is a matter of great importance to the educator. He says: —

"The young children under six accept what they have been told without question or comment. They, however, recast their theology into forms that appeal to their experiences and their modes of thought. From seven to ten there are occasional vague questionings, but under ten years old there are few indications of a questioning or doubting frame of mind. From that time on, however, questions arise; the children try to reason things out, and to relate their theology to what they have learned through experience and through their studies. This critical spirit seems to culminate at thirteen or fourteen, and the criticisms are far more persistent and severe at this time than later. Of course, in this work, as in all studies on children, one must recognize the fact that some children develop much more rapidly than others, so that there are many exceptions; but there is a clearly marked difference between children of eleven and of thirteen which must strike even the most careless observer."

Disregard for Truth. — One of the most common charges of wrong in children is that of lying. The opinion has already been expressed that the charge is often unfounded; that in many cases the intent to deceive, which is the essence of falsehood, is wanting; that the distinction between reality and the product of imagination is not clearly comprehended; and that harm is done to the moral nature, as well as injustice to the child, by a hasty and inconsiderate accusation of lying. It is conceded, however, that some children very early become addicted to this vice, and lie habitually and

apparently deliberately, even when it is difficult to discover any motive for so doing, when, indeed, the truth would seem to serve them better. But such cases are exceptional and frequently result from unwise treatment.

The literature upon this subject is pretty abundant and of varying degrees of value. Among matter recently published is a report upon "Children's Lies," prepared by Dr. Hall, giving some conclusions drawn from an examination of three hundred children of both sexes between the ages of twelve and fourteen.

Six distinct species of lies are recognized and described: —

(1) *Pseudophobia.* — Lies under this head are characterized by the silent use of "not," or "I think," or "perhaps," or other similar mental and unspoken words. There is usually strong fear of evil consequences, and obvious effort to escape the appearance of out-and-out lying by casuistry and other devices which tend to destroy real nobility of character.

(2) *The Lie Heroic.* — Lies which belong under this head are told to promote some noble and praiseworthy purpose, or what seems such to the child and sometimes to a person of more mature judgment and broader experience. A strong child takes upon himself a wrong committed by a weaker one and bears the penalty. A pupil lies to screen an associate. Cases are imagined and described in which deception, involving something of self-sacrifice, appears clothed in a garb more attractive than truth itself. Lies of this sort are peculiarly difficult to deal with, on account of the really noble element of character which is associated with them in the mind of the child.

(3) *Truth for Friends and Lies for Enemies.* — The term "enemies" is somewhat too strong for the idea which it is employed to express. Children are obviously more inclined to deceive teachers whom they do not like, and to lie to people to whom they are under no obligation. The feeling in the child seems to be akin to that in the adult which holds anything justifiable in war, in politics, or in business.

(4) *Lies originating in selfishness* appear in the cheating which takes place in games. School life affords tempting opportunities for lies of this sort: cheating in recitations and examinations, feigning illness and forging excuses for absence and tardiness, playing truant while pretending to be in school, and many other forms of deception have their root in selfishness, which shades off into self-indulgence, love of ease, and dislike of the disagreeable. Anything which appeals very strongly to the feeling of emulation, and thus excites envy and jealousy, presents temptation for selfish lying.

(5) *Imagination and Play.* — There is especial demand for caution in characterizing the acts and words of children classed under this head. Children are extremely fond of imagining themselves to be this or that, and of "make believe" plays in which they assume the names and act the parts of older people. They tell wonderful stories of the strange things they have heard, and seen, and done. All this usually means very little; mental conceptions and combinations are described with great seriousness, but there is no conscious purpose or intention to deceive, — no lying in the proper sense of the word. It is a matter of pedagogical interest and importance to determine the influence of fairy tales and fables upon this native tendency of childhood. It is well said,

" Such exercise of their faculties children must have, even in the most platonic school republic. Its control, and not its elimination, is what is to be sought in the high interest of truthfulness."

(6) *Pseudomania.* — Pathological lies are probably rare among children, as rare as genuine kleptomania among adults, and yet an apparent mania for lying occasionally makes itself manifest. This disposition, in most cases, results from affectation, from a desire to attract attention, from a love of applause, from a fondness for " fooling " others, or from a desire to be thought " smart," and to make one's self of importance in the eyes of associates; in a few cases the propensity seems to be innate, and the child, or the man, lies against every motive of prudence and self-interest, as if under the control of some irresistible impulse.

After describing a great variety of falsehoods, spoken and acted, and some of the excuses urged for these, the report referred to says, " In fine, some forms of the habit of lying are so prevalent among young children that all illustrations of it, like the above, seem trite and commonplace. Thoroughgoing truthfulness comes hard and *late,* and school life is so full of temptation to falsehood that an honest child is its rarest, as well as its noblest, work." My own observation and experience justify me in entertaining a more cheerful view of childhood, and a more favorable opinion of the general influence of school life. Unfortunately the vice of lying is widely prevalent both in school and out of it, but it is not so universal that an exception is a rarity to excite wonder.

Children's first Questions. — The maxim " follow nature," in the education of the child, has become trite; it is none the less a sound maxim if rightly interpreted

and wisely applied. We may suppose it to mean, "begin where the child begins when left to himself; follow where the child leads when he is allowed to choose his own way and his own order of progress; help him first to answers to the questions which he first asks." In the examination of objects what questions does the child first ask when undirected by the teacher or others? One recent observer concludes, "That young children attend almost exclusively to *use*, and care very little for form and color or structure, etc." Children of *seven* think they have told all when they have told what a thing is good for, as a horse is to ride, a cow to give milk, a house to live in, and so on. At *eleven* use is still the leading idea, but to this they are inclined to add definition by employing a term of wider signification, as a house is a building, a cat is an animal. At *fifteen* defining by employing a larger term comes before use: inquiries about substance and structure are prominent; color receives little attention. The disposition to inquire concerning qualities and to classify appears late.

These conclusions are not in accord with generally received opinions, nor with the usual order in teaching. Most instructors are accustomed to begin with color and form, parts and structure, leaving the question of use to follow these. It is desirable to have further and careful observations in relation to this point, since it has an important bearing upon the order and character of elementary teaching.

Study of the Body. — Some attention has already been given to those parts of the body most intimately connected with psychical action; the study of the perceptive activities has necessarily involved some consideration of the external organs of the senses.

Observations and experiments have been made in various quarters in relation to the growth and development of the body, and in relation to other matters involving the functions of the physical organism. Some of these require a brief notice on account of their practical value to teachers.

Growth of the Body. — The growth of the body is most rapid during the earliest years of life. Boys are both taller and heavier than girls up to about the twelfth year; during the next two or three years girls grow more rapidly than boys, and, in many cases, surpass them in height and weight, reaching comparative maturity earlier than boys, and attaining nearly their full growth at sixteen or seventeen. After this time boys again become taller and heavier than girls, and, as a rule, continue so during the remainder of life. The results of examinations differ somewhat in different localities; investigations in Belgium are said to show that girls are not taller than boys of the same age at any period of life in that country. Statistics seem to prove that height and weight are affected, to some extent, by race and possibly by climate and other local conditions.

A few questions naturally suggest themselves which, to some extent, concern the schools: Do the ordinary conditions of school life favor the normal and healthy growth of children? Do children in school grow more or less rapidly than those out of school employed in manual labor? Since children, during the periods of most rapid growth, are less able to do hard mental labor, can the work required by the schools be arranged with reference to this fact?

Defects of Sight and Hearing. — The results of the examinations of children in various localities, both in this

country and Europe, appear to justify the conclusion, even after making due allowance for the probably unconscious tendency of experts to exaggerate the evils for which they are searching, that, in many cases, the sight is seriously impaired by conditions existing in the schools, such as insufficient light, the bad arrangement of windows and seating, the location and distance of blackboards, the size of type used in books, and others which need not be enumerated. While teachers, in most cases, are not primarily responsible for the existence of these bad conditions, they may justly be held accountable for any resulting evils which intelligence, forethought, and proper care would prevent. Congenital cases of defective sight should be inquired into, and pupils should be seated with reference to such defects when this is possible. Moreover, it may reasonably be expected of teachers to be prepared to advise wisely in relation to all conditions which are calculated to affect injuriously the eyes of their pupils, and to suggest means by which these conditions may be changed and improved.

Systematic observations and examinations in respect to the hearing of school children are of comparatively recent date. It is exceedingly difficult for parents, or even for experts, to determine the existence of defects in the hearing of young children, or the extent and character of defects when their existence is suspected or perhaps admitted. In most cases the child himself is not aware of any deficiency in the power of hearing, parents do not discover it, and teachers attribute the appearance of the pupil to heedlessness or stupidity rather than to partial deafness and consequent inability to understand what is said. It not infrequently happens that only one ear is defective and the child hears fairly

well with the other: when the sound ear is toward the speaker the child responds readily to requests and directions; his failure to do so when the other ear is toward the speaker is attributed to inattention or to wilful disobedience. In consequence not only is injustice done to the child, so far as intention and disposition are concerned, but he is put to great disadvantage in his honest efforts to learn. His progress is slow and he becomes discouraged, and, more than this, the chances are that his disposition and temper are changed for the worse. Conscious of being wrongly accused and unjustly treated, he comes, after a time, to possess and exhibit the bad traits with which he has been falsely credited.

Various methods of testing the hearing have been devised by different examiners, all of which are open to more or less of objection; it is not easy to fix upon any one mode which can be employed successfully and conveniently under all circumstances. The number of defective ears in any particular school will be very few; and careful observation of pupils, day by day, while engaged in their ordinary work and in their plays, will enable an intelligent teacher to detect all cases of deficiency in hearing. When pupils are discovered who are thus afflicted they should be placed in the most favorable conditions possible in respect to seating and other arrangements in the schoolroom and in the class when reciting.

The differences between the results obtained by different investigators are so considerable that no general conclusions can yet be drawn upon which much reliance can be placed. The per cent of children defective in hearing, as shown by published tables, ranges from 2.18 in some places to 25 and 30 in others, one or two exam-

iners making it even more than 30. While the lowest per cent may possibly be below the true average, the highest leads one, who has had some personal observation, to distrust the results of expert examinations.

Suggestions. — The substance of the following suggestions is selected from various writers: —

(1) Teachers should remember that in every class of twenty or more there are probably some defective to a greater or less extent in hearing.

(2) Children known to be defective in hearing should be placed in the most favorable positions for hearing.

(3) Idle, dull, and inattentive children should be tested for defects in the ears, and if found defective should be treated accordingly.

(4) To guard against colds in the head, a common source of deafness, care should be taken that currents of cold air from windows do not fall upon the heads of children.

(5) Since partial deafness is a comparative term, some provision should be made in connection with schools, to determine the degree of disability, and the best methods of making compensation to children for defective hearing.

Some General Suggestions as to the Study of Children. — In closing the chapter the following suggestions are offered: —

(1) Teachers in all grades of schools should give constant attention to the study of children generally, and especially to the study of individual children under their charge. Such study should not be confined to young children, but should embrace pupils of all ages and of all stages of development. Pupils between the ages of ten and fifteen afford material for most profitable observation and study.

(2) No one plan of study will be best for all observers, or for all times, places, or circumstances. Each observer should do what he or she can do most advantageously under existing conditions. As a rule the simpler the scheme of working the better; complicated blanks for reporting, with many and minute divisions and subdivisions, will be hindrances rather than helps; a few somewhat general heads and directions will be enough for the ordinary observer; the expert scientist may have as many as he pleases.

(3) Schemes of study may properly embrace anything and everything which has relation to the physical, intellectual, or moral education of children. The whole field for study is consequently very wide; some portions of it have hardly been explored even superficially, while other parts have received considerable attention. Some observations, explorations, and examinations can be made by teachers of ordinary intelligence and without apparatus or means other than good common-sense and well trained powers of observation; other observations and examinations can be carried forward only by scientists and with the use of means not now in the hands of teachers generally.

(4) Some of the directions which the observations of the ordinary teacher may take: —

(*a*) The health of children; effect of school life upon this; school hygiene generally.

(*b*) Sense-perception; activity of the different senses, sight and hearing especially; perception of colors, forms, sounds, etc.

(*c*) "Contents of children's minds" on entering school; practical relation of this to elementary teaching.

(*d*) Particular modes of mental activity, such as memory, imagination, judgment, reasoning.

(*e*) Ideas of right and wrong; motives which have most influence; effect of new motives employed, etc.

(*f*) Games and plays; apparent influence of these upon development and character.

(*g*) Inclination to deception; forms in which this is manifested; influence of environment in producing this tendency; modes of dealing with children who exhibit this disposition, etc.

(*h*) Vocabulary of children; extent and character; relation of this to environment, etc.

(*i*) First questions which children ask in respect to new objects; apparent influence upon the character of such questions, etc.

This list of points for observation is intended to be suggestive merely; it will be wise to consult surrounding conditions and, to some extent, personal preferences in determining the direction of observation.

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